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ART. I.—*Doctors and Drink.* Extracts from a paper read before the Union District Medical Association. By D. MILLIKIN, M.D., Hamilton, Ohio. Published by request of the Association.

Mr. President and Gentlemen: I think I may truthfully say that the imperfect thoughts which I am about to present to you have forced themselves upon me. Had it not been so, I would hardly have taken up a subject, the mere mention of which, sad to say, arouses in most men passionate, quick prejudices, rather than calm and philosophic interest—a subject which, here and elsewhere, has, even in recent times, arrayed party against party, church against church, race against race, and almost sex against sex, insomuch that we were once ready to declare that alcohol maddened those who used it and abused it, and those who totally abstained. And yet, since the subject is one of so great importance, and belongs to our profession, I gladly risk the *odium theologicum* and the *odium alcoholicum* in an endeavor to learn a little more than the little we know of the laws of drunkenness—laws of great importance to mankind, and to every man that loves his kind. * * * * * * * * * *

There is a theory of the origin of drunkenness with which I make an early and a hearty quarrel, not so much because I deem it essentially false, as because I know it is an inadequate expression of the etiology and pathology of this

affection or habit. This insufficient theory, beginning with the premises that the heart is deceitful above all things, and desperately wicked, concludes that drunkenness is simply a form of wickedness, nothing more, nothing less. I have no doubt that you will agree that a theory which makes inebriety merely an outbreak of depravity, gives the physician no clue to a rational prophylaxis, or a proper treatment. Worst of all, the mind that is preoccupied with this theological theory of the causation of drunkenness seeks logically for some mode of cure known to theology; and, relying on sermons and prayers, neglects what I may be permitted to say, are more efficient curative agents. We will lose nothing if we pass lightly by another popular theory, notable chiefly for its inaccuracy, which asserts virtually that all men are prone to drunkenness, all alike are drunkards *in posse*, though some are diverted from the natural destiny of all by laws which make alcoholic beverages more or less inaccessible, by fortunate early training, by the pledge-book, and, in fine, by circumstances. * * * * *

Drunkenness, I take it, is made up of two factors, or let us rather say, has two main roots: First—*The appetite for the specific poison;* and, second—*A will too weak to resist the appetite.* This simple statement leads us into deeper waters. For the alcoholic appetite is not a simple physical lust, as many suppose, but is itself complex, made up of a physical desire, and I may say chiefly of a mental desire.

It will be asked of me, I know, how it can be true that the mind craves alcohol when nothing can be more irrational than intemperate indulgence. Let me see about this. It is everywhere granted that after a long season of inebriety, man's mental part craves alcohol to deaden remorse, to quiet dissatisfaction with self, and to obtain rest from just reproaches of friends. Now, I ask you to remember, what we too often forget, that the world is full of men and women as miserable and as uneasy in their minds as the average

drunkard. Great hopes long deferred have made the heart sick; shafts well aimed have been blown aside; confident, exultant pride has brought a fall. Besides, people who are, as we say, unlucky, and hence, wretched, there are many miserably melancholy persons and families who are from birth more or less devoid of hopes, of ambition, and are incapable of any great happiness. These are born to gloom; they suffer not so much from the accidents of life, as from a congenital vice. Now, the point I would enforce is, that the drunkard's remorse is merely a variety of unrest and misery; and, barring the fact that a drunkard's physical man, once taught to drink, demands drink; there is the same reason, *i. e.*, the same mental anguish, for a miserable man's commencing drunkenness that there is for an inebriate's continued drunkenness.

To one who is contented, and happy, and temperate, this may seem a poor excuse for that wreck of body and soul which presents itself to the mind's eye when we hear the hard name of *sot*. But I believe it is the prime motor in most cases of drunkenness, and a powerful accessory in the rarer cases, which begin by a physical lust. I have sometimes thought that the public understood this matter far better than we. When a man in our community is jilted in love, or unhappily married, or widowed, or bankrupted, or discharged from good employment, or acquires a hopeless disease, Mrs. Grundy closely watches that man to see if he will not take to drink. And why? Because, whatever else alcohol can do, it certainly can gratify for a time the tired soul's longing for rest.

Am I speaking in incomprehensible terms when I speak of this longing for rest? Sir, it is the aspiration which moves every man of thirty years to wish, at some time, that he were out of the world and done with its worry. It is the aspiration which at this moment is religiously cherished by one-fourth of our race, who wait and strive only to be worthy of absorption into that Buddha who sits throughout eternity

meditating on all things but himself, and happy in perfect lack of self-consciousness. It is this aspiration which leads men to suicide, and which Tom. Hood has fixed for all time in six reckless words.

"Anywhere, anywhere out of the world!"

It is this aspiration which Hamlet breathes in the familiar soliloquy, wherein he declares the sleep of death a consummation devoutly to be wished, if only that sleep be dreamless.

Now, you will agree with me that a drunken man is, for the time, not his proper self. He may be a maudlin fool, but he is out of himself, and is no more capable of mental anguish and unrest, than one under anæthesia is capable of physical pain. Unthinking persons note the vast number of dissipated lives that end in suicide, and at once suspect some casual relation between drunkenness and suicide. Doubtless there is such a relation in certain cases; doubtless suicide is the natural end of a subject demented by long alcoholism. But I see a close relation; drunkenness and suicide are twin errors, growing out of this determination to change one's surroundings, or to be rid of self at whatever cost. Many a poor wretch has exhausted the nepenthean virtues of alcohol to find them all too feeble for his desperate case, and turns to suicide as the sole remaining alternative. Suicide is only a deeper draught of that oblivion which the miserable man seeks and finds in the bottle. * * *

Having said so much of the mental causes of drunkenness, it is in order now to consider the alcoholic appetite in its physical origin. And under this head we note first that the craving for alcohol descends by inheritance. The simplest form of inheritance is that of descent from parent to child. We should remember, however, that hereditary transmission often comes from a remote ancestor, and merely *through* an immediate progenitor. Stock-breeders, who carefully observe many more generations of domestic animals than the oldest

physician can ever observe in the human species, have confirmed the same law. We should, therefore, not be surprised to see drunkenness descend through a generation, perhaps through several generations, in a dormant state, to explode unexpectedly upon the offspring of temperate persons.

The meddling with alcoholic liquors is another source of the appetite for alcohol. In most parts of christendom every one is required to drink more or less by the usages of polite society, and how powerful these customs are I need not say. Many youths who are not tempted to drink by any appetite, nevertheless cultivate habits of tippling, under the impression that perfect sobriety is not a sign of manhood. The great army of men engaged in the manufacture and sale of liquors are required to drink more or less by the very nature of their vocation. Now, I would not pretend to say that all who thus meddle with drink must inevitably take to hard drinking; but I do believe that many persons who were not born to be drunkards, contract the alcoholic habit by moderate drinking; and I do believe that others, having the alcoholic propensity dormant in their constitutions, arouse the slumbering devil by slight indulgence.

It has been plausibly intimated that diet has an influence on the very beginning of the craving for alcohol. It is very certain that the carnivorous races are cursed with the most powerful drink mania. I may mention our American Indians, the Cossacks, and the Guachoes of South America. Conversely it may be noted that neither the blubber-eating Esquimaux, nor the rice-eating people of India and China, are inclined to abuse alcohol. This subject of the relation of diet to drunkenness, is one that merits our attention, though as yet, the theory which asserts a close connection between a nitrogenous diet and the alcoholic frenzy is a pure theory. I submit the matter as one of the possible physical causes of drunkenness.

We have seen that mental disquietude, from whatever

cause arising, tempts the sufferer to resort to some agent which shall rid him of himself, and alcohol, owing to its cheapness and association with conviviality, is the mos popular of all the drugs that have this power. We have seen also, that the alcoholic mania is transmitted from parent to child, and that the propensity is sometimes transmitted undeveloped, encysted as it were, through one or two generations, to be developed in a third or fourth generation. It now remains to discuss the second factor of drunkenness mentioned in the beginning, namely, a feeble mind.

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Small self-control under the stress of internal and external temptation is, I take it, to blame for the fall of most drunkards. As a general thing they yield quickly either because of a congenital deficiency, or, too often, because of a deficiency acquired through a bad education. This defect, permit me to say, is the more dangerous since it is scarcely recognized by men outside of our profession. In fact it was not until recent times that forms of mental deficiency and disease affecting the volition were admitted, and it is quite recently that they have been studied. The lawyers absurdly claim that every man who can perceive right and wrong, can choose between right and wrong, and the very possibility of a feeble or sick will, is laughed out of court.

Just here there presents itself a truth bearing at once on the etiology and treatment of dipsomania. There is no agent known, excepting perhaps opium, that will so quickly as alcohol diminish the mind's power of directing its own operations. This is tantamount to saying that alcohol has the power of taking away man's manliness, for, surely, if our mental operations are clearly distinguishable in kind, from the mental operations of the lower animals, it is by our remarkable and unique power of confining thought within bounds, and of projecting it in predetermined directions.

The mind, under the influence of alcohol, is deprived of

this self-controlling power, and is free to follow automatically and inertly in lines of thought, or emotion, or volition, which external sensations or the suggestions of others may indicate. It is skillfully administered by gamblers to their victims, not alone to confuse the mind, but to diminish the power of self-control. With the same object in view it is used by harlots upon their patrons, and very wisely, for nearly all the wretched girls who recruit the bawdy-houses, make their first mis-step when well filled with wine—and such wine! Nay, it is used by men upon themselves, when they wish to go automatically through a performance which they can not accomplish with their faculties all awake. It is not many years since a desperado in Columbus, Ohio, conceived the idea of climbing in the rear end of a wagon, to murder and rob a farmer returning from market. He not only perfected his plan in all its details, but actually climbed into the wagon, and then found that he could not force himself to use the hammer which his horrible forethought had provided to crush his victim's skull. Knowing experimentally the power of alcohol to quiet his better part, he fortified himself with heavier draughts of whiskey on a subsequent market day, and performed the murder in all its hideous details, as he had planned it. In his testimony he conveyed the idea which we are now entertaining, that alcohol has the power of degrading man to the condition of an executive sentient machine. More instances illustrative of the principle that alcohol diminishes the mind's self-watching and self-controlling powers, would lead us too far from the present line of discourse. The annals of crime abound with them. It is my present object to press this one thought: Given a subject with the alcoholic propensity and just enough power of will to control himself, a brief indulgence in alcoholic drinks is excessively dangerous, since it directly diminishes that subject's self-control. Alcohol strikes the best weapon from the hand of such a man, and leaves him an unarmed and

passive victim of the thirst which he has hitherto overmastered and repelled.

Before passing on to discuss the treatment of dipsomania, it will be profitable to point out its relations to other diseases. To be brief and general, this malady is correlated with all the neuroses as all the neuroses are correlated with each other. We would naturally expect to find the mania for drink in families afflicted with hysteria, for hysteria implies always a loss of self-control. We look also to find drunkenness prevailing in families that have a taint of insanity—a fact inexplicable unless we admit that drunkenness is to a great extent a mental malady, and therefore to be found in some sort of close relationship with other forms of mental disease. Looking farther we come upon a group of diseases very closely allied to insanity, and, as I believe, to drunkenness. The subjects of these diseases are persons of marked eccentricity, precocious children, geniuses whose minds run in some one direction, apparently without internal guidance, and, lastly, monomaniacs of every sort, whose name is legion—misers, spendthrifts, religious enthusiasts, kleptomaniacs, homicidal and suicidal maniacs and erotomaniacs. A group of neuroses remote from these strictly mental affections is made up of neuralgia, epilepsy and catalepsy, which are all akin to insanity and to dipsomania. Some would connect asthma and spasmodic colic with these other neuroses, and, silent as are the great written authorities on this head, this is matter calling for our study. Since my attention has been directed to the connection between drunkenness and asthma, I have seen and have recalled a surprising number of families wherein the offspring of asthmatic parents have given evidence of a great tendency to the vice of drinking.

Now, I would very poorly impart my meaning if I were to seem to say that all drunkards, or most drunkards, will be found to be afflicted with one of these neuroses.

What I desire rather to say is that these, and probably others,

are allied to dipsomania, and spring from one and the same constitutional defect. I look therefore through the abundant clinical records of the books, and review the list of my acquaintances, with an expectation of observing the descent of this neurotic defect, greatly modified, from generation to generation. This expectation is not disappointed. More surely than consumption, more surely than syphilis, more surely than cancer or scrofula, the mal-organization from which are bred these mental and nervous diseases, is handed down from the afflicted to their posterity. * * *

We might almost embody the whole treatment of drunkenness in a quotation from Dr. Holmes. He admits the correctness of the popular notion that the doctor can cure anything if he is called in time, but, he says, the doctor is generally called about two hundred years too late! Yet something can be done for the cure of the inebriate as we find him.

While seeking the causes of drunkenness we have already found some indications for treatment, and these we will briefly recapitulate while presenting others.

But, first, let us understand what we can not do. We can not remove drunkenness from the face of the earth. Your attention has been earnestly directed to the fact that it is a vice springing from physical and mental defects apt to be acquired, apt to be inherited, and hard to be compensated or corrected.

I have argued also that drunkenness grows out of certain purely mental causes which induce melancholy and discontent, and some of these causes of mental distress are fixed upon us by the very conditions of life. I submit then, that so long as these defects in human constitution endure, and so long as the physical and mental conditions of the alcoholic habit arise, drunkenness will continue. There is, moreover, growing in the great cities a class of men, the so-called criminal class, cursed with all the nervous maladies we have

enumerated, and almost always addicted to drink. The caste of these people is as immutable as the Gypsies'. They live among us, but are as inaccessible as the tribes that drink from the fountains of Herodotus. They seem to be of us, but they are as incorrigible as the Sioux. So fast as civilization, and refinement prevail, as surely they will prevail over the earth bringing prosperity in their train, so fast the great cities will grow greater and more numerous, and this incorrigible and inaccessible class will greatly multiply and forever recruit the army of drunkards. The hope of "blotting drunkenness from the face of the earth," which we often hear expressed in the pulpit and even in medical societies, is a hope not based upon any study of the natural history of the human species; it is a hope to be realized only when all human defects and diseases shall be blotted from the earth.

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Turning to a discussion of the possibilities of treatment, we remark, upon the physical appetite for alcohol, that it notoriously grows by what it feeds upon. Not upon any fine-spun theoretical grounds, but on the testimony of many inebriates we are able to assert that the first step in treatment, is the complete withdrawal of alcohol from the patient. A slight indulgence, even a few drachms daily of some alcoholic medicine, given with the best intentions, may be enough to keep the craving alive. We have already developed another truth sufficient of itself to insure the total abstinence of the drunkard who would reform; he can do nothing unless his will is acting with great intensity, and the influence of alcohol is to directly paralyze the volition. It is, therefore, let us repeat, all important that the inebriate should be induced to abstain, and some means of compelling abstinence, which might be objectionable on general principles, are yet justifiable on the ground that the patient can not voluntarily abstain, nor even try to abstain, until the alcohol has been eliminated from his system.

Alcohol damages chiefly the nervous centers, and when it is withdrawn suddenly, the signs of deranged health point chiefly to those centers. They must therefore be supported by food and tonics until the crisis is past. The choice of medicines lies between the nerve tonics; but sedatives, even the narcotics, may be needed to carry the patient over the first few weeks of his sober life. There is, in my mind, no fear that strictly medical attendance will be neglected by the average physician; it is likely to be done and overdone. But there is good reason to fear that the proper mental and moral influences will not be so promptly and skillfully employed, for it must be confessed that neither the public nor the profession appreciate the *materia psychologica* as highly as the *materia medica.*

The great work to be accomplished by our mental therapeutics is the stimulation of the will, and the removal of the melancholy or more acute mental distress, which we have at some length remarked upon as a cause of drunkenness. We can reach the will by way of the intellect and the emotions, but the appeal to the inebriate's intellect may well be omitted. Be he never so low he knows the depth of his degradation, and the great bulk of temperance addresses, designed as they are to convince men of the greater excellence of temperance, are merely arguments to prove what no person (certainly no drunkard,) would ever think of denying. It is eminently proper to operate upon the drunkard's emotions. Since intemperance brings disgrace or ruin on the patient's family or friends, his love for these may be invoked to induce him to reform. If self-respect be not entirely dead, it must be aroused if possible. And here it may be well to say that the most successful appeals to self-respect are not the loudest. There is a more delicate vehicle than speech for the conveyance of our wishes. The patient may be experimentally treated, not as the man he is, but as the man he was in better days. Affection may devise some business for the unfor-

tunate patient, not necessarily of any great importance, but yet such as would not ordinarily be entrusted to one hopelessly fallen. And one's very mode of address may be made to convey to the patient the hope that he is not yet beyond hope, that he is well worth saving, and that there is the making of a man and a gentleman in him yet. I would be the last man in the world to encourage the marriage of an inebriate, and I shall ever do all that I can to promulgate the truth that such a union is an audacious tempting of providence, almost certain to result in the ruin of an innocent and ignorant woman. But the occasional cases in which a devoted woman's love stimulates all that is good in an inebriate, arouses his slumbering manliness, and saves him triumphantly, should teach us the great value of an atmosphere of hopeful affection and respect. So rarely does this beautiful, romantic, and to me, thrilling spectacle end in success, that we may not hope for a large proportion of cures, when we can only employ means similar and never equal to those of the devoted young wife. But the fact remains for us that the inebriate is, even more than most men, inclined to value himself at the appraisement of others, better men, and that his self respect is greatly at the mercy of others.

On all accounts travel is desirable for the inebriate. It harmlessly gratifies the restlessness that belongs to the neurotic type: it engages the mind without causing fatigue: it furnishes an excellent opportunity to run away from evil associates and associations. At the same time, if the route and the travelling companion are judiciously chosen, abstinence from alcoholic drinks may be secured without rudeness. Among strangers the inebriate is treated with courtesy, and may learn to treat himself well. Other men find in travel the inspiration to return to duty at home with quickened energies, and there is some reason to hope that the inebriate, after the diversions of travel, may perhaps return recreated in the highest sense.

I hope I may say without offense that religious feeling may rightly be cultivated by the physician in the person of his inebriate patient. Under strong religious feelings the desire to reform may spring up, or a long-cherished desire acquires for the first time an intensity sufficient to carry the drunkard through the hard beginnings of reform. And here is no marvel. There is no religion that fails to teach that drunkenness is a sin. There is no living religion that does not assure the drunkard he may be saved, and is well worth the saving. There is no religion that does not include temperance among its choicest virtues, nor that does not denounce future woe, or negative unhappiness upon immoral present life, and though to purer souls these threats are of little significance, they often affect the drunkard's mind with terrible force.

And now, finally, seeing how many men are driven to drink by mental distress, unrest, or anguish, we may lay it down as a principle of treatment that everything that can annoy, harass, and perplex the patient should be removed if possible. The ordinary perplexities of "business" should be averted by friends. If there is a scolding wife at home she must be dealt with, but the tongue, alas, can no man tame. Disappointments must be healed. New and congenial pursuits may need to be suggested. In every case, and more especially in those cases where drunkenness has sprung out of life-long idleness, it is important that the patient should be provided with regular, honorable employment, either for bread or for fame. I would greatly trespass on your time and attempt a difficult task if I were to try to estimate the potency of good temper, good manners, and good books in arousing the dormant manliness and gentlemanliness which we may charitably hope to discover in the lowest sot. I leave the whole subject of the mental and moral treatment of drunkenness with the remark that it acquires a double value when pressed by the physician, who may often-

times need, not merely to supervise, but absolutely to invent and commence such treatment. Familiar truths such as I have been urging upon your attention are not familiar to the laity, and they come with great force when they come fresh from the family physician, who is supposed to advise as one who deals with life and death.

Recapitulating, then, we may say that this is the whole treatment of drunkenness: Abstinence from alcohol, support for damaged nerve-centres, the best possible nutrition for the whole body, stimulation of the will by operating on the intellect and the emotions, the removal of mental distress of every grade, and the maintenance of a sweet and wholesome moral atmosphere about the patient.

Treatment will fail in most cases. We must labor with fifty to save one. The morbid physical organism that craves alcohol, the morbid mind that solicits its dangerous sedation, the feeble will that soon surrenders to this double temptation—these are, for the most part, defects of constitution which we can rarely and hardly correct. As a rule, it is too late to reconstruct the organism of an individual so defective, when he has passed puberty, and has become addicted to drink.

Another reason why we must look with poor hopes upon the drunkard's future is in the fact that nothing can be done for him without his consent and active coöperation. He must actively strive to be free, and, unfortunately, by birth, or by the influence of alcohol, he has been deprived of the very power of striving. We have, then, good reason for a bad prognosis.

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Though called two hundred years too late for the drunkards of our generation, we can do much for the drunkards of the rising generation, and even more for drunkards yet unbegotten. The great prophylactic which I would recommend is education—education of the public and of the classes sus-

ceptible to drunkenness. I would have a wonderfully lecture-ridden and ignorant public know that to successfully oppose alcoholic intemperance, it must also attack and suppress a great group of nervous diseases. I would have the public know that uncultivated minds, undeveloped wills, and uncontrolled emotions are directly related to drunkenness. I would have young men and maidens, yes, and parents, taught that marriage into families of "nervous" people is dangerous, and that the neurotic taint which has a comparatively innocent manifestation in this generation, may manifest itself in hysteria, insanity, dipsomania, and a hundred other maladies in the next generation. It has been said with some propriety that marriage between young persons bent on marriage can so rarely be prevented that it is better for the physician to withhold his protest always, lest his influence should be overstrained. I believe, however, that young persons, and especially young women, will not be inclined either to marry with, nor to yield their affection to, those whom they have learned to regard as mental and moral cripples. I believe that young people can be so instructed as to observe family traits, and to make an intelligent estimate of the danger to him, or to her, who marries into a family afflicted with the neurotic taint. I would not pretend that such knowledge should change a pure love already grown, but I do think it would greatly tend to prevent the very beginnings of affection where marriage promises to be a calamity. Let me mention the young women again with a confidence which I hope is not extravagant: I believe that when they have learned to perceive moral and mental deformity, they will bestow upon it infinitely tender pity, but not wifely love.

We may hope, also, that when there is more general knowledge of the susceptibility of certain men, they will not be recklessly invited and forced to drink, as is now the custom.

I trust, also, that when the public mind is directed to this matter, it will perceive that unusual wilfulness, and the

other childish manifestations of a weak, self-controlling power, are not merely disagreeable tricks in children of the neurotic class, but are the infallible signs of a dangerous mental infirmity which ought to be corrected and counterbalanced by education during infancy and early youth, when only they can be corrected.

Here, sir, I rest. I would gladly go further into a discussion of the great efficacy of education of the public by our profession and of susceptible classes. It was, in truth, the subject which I set out to elaborate, but I have been so long delayed by preliminary and collateral matters, that we must pause where we would have begun. I may plead, in extenuation, that we have passed by topics of the highest interest. We have not touched the question whether alcoholic drinks should be banished from society, nor the associated question whether, by the cheapness and abundance of mild alcoholic beverages, the public may become accustomed to their use, and learn to use them with moderation. We have passed, also, an important question, which was mooted at a recent meeting of this Association, whether dipsomania can be best treated in asylums; and, if so, whether the State should found and control them. The merits and demerits of alcohol as food, as medicine, and as poison, we have not touched upon. He who approaches the subject of alcohol, or alcoholism, finds himself embarrassed by the great number of topics which must be temporarily laid aside for future meditation and discussion.

ART. II.—*Evidence and Conclusions on the Antagonism of Belladonna and Opium.* By E. S. RICKETTS, M.D.

From poisonous doses of opium the following symptoms are usually observed within a short time: giddiness, insensibility, and immobility, respiration scarcely perceptible, and a small, feeble pulse, which, sometimes, becomes full and slow. The eyes are shut, and pupils contracted, and the

whole expression of the countenance is that of deep and perfect repose. As the effects increase, the lethargic state becomes more profound, deglutition is suspended, the breathing occasionally stertorous, the pupils are insensible to the application of light, the countenance is pale and cadaverous, and the muscles of the limbs and trunk are in a state of relaxation; vomiting sometimes supervenes, and there is an occasional glimpse of returning animation, but the comatose state soon returns, and death, which is sometimes preceded by convulsions, rapidly follows. (Dr. Beck.) After a large dose of belladonna, the face becomes flushed, the eye bright, dry, and injected, the pupil dilated, the sight dim and hazy, while the power of accommodation in the eye for distance is lost. The mind and senses are peculiarly affected; the ideas, at first rapid and connected, become incoherent and extravagant; there is often decided delirium, with pleasing illusions. Sometimes the patient is possessed with constant restlessness, keeps continually moving, and cannot be quieted. A kind of somnambulism is occasionally observed. Thus cases are recorded where, under the influence of belladonna, the patient, for a long time, performed the movements customary to his occupation. The delirium may be furious and dangerous. Atropia excites the cord and heightens reflex action, paralyzing both the terminations and the trunk of motor nerves. (Ringer.)

Dr. Wm. F. Norris (*Am. Jour. Med. Sci.*, Oct., 1862) publishes a list of cases of belladonna poisoning, treated with opium; also, opium poisoning, treated with belladonna. (22.) He says: "In regard to the foregoing cases, they seem conclusively to show that, in opium poisoning, belladonna, in doses which, in a state of health, would certainly poison, may be administered with impunity, and be followed by a rapid subsidence of the symptoms produced by the exhibition of the former drug; and, *vice versa*, that opium rapidly and safely counter-

acts the poisonous influence of belladonna. The treatment above indicated has, indeed, in some cases failed, and this may prove that they are not mutually antagonistic; but, even in these fatal cases (which are few), we may sometimes see a partial amelioration of the symptoms, and it is well worthy of inquiry, how much, in these instances, the relative quantities of the two drugs administered, the stage of poisoning in which the patient was first seen, the age and constitution may have contributed to the result. Thus adding, 'the mode of action of these drugs on the nervous system is not well understood.'"

Drs. Mitchell, Keen, and Morehouse say, after experimenting:

It thus appears that the influence of atropia on the pulse and respiration is in no way altered by the full use of doses of morphia; so that in this particular their supposed antagonism does not exist. They think their experiments authorize them to draw the following conclusions as to the antagonism of atropia and morphia:

1. Conia, and atropia have no power to lessen pain when used hypodermically.

2. Morphia, thus used, is of the utmost value to relieve pain, and is most potent, in certain forms of neuralgia, the nearer it is applied to the seat of suffering.

3. Morphia lowers the pulse slightly or not at all, atropia usually lowers it a few beats within ten minutes, and then raises it twenty to fifty beats within an hour. The pulse finally falls about the tenth hour below the normal number, and regains its healthy rate within twenty-four hours.

4. Morphia has no power to prevent atropia from thus influencing the pulse, so that, as regards the circulation, they do not counteract one another.

5. During the change of the pulse under atropia, the number of respirations is hardly altered at all.

6. As regards the eye, the two agents in question are mutually antagonistic, but atropia continues to act for a much longer time than morphia.

7. The cerebral symptoms caused by either drug are, to great extent, capable of being overcome by the other, but owing to different rates at

which they move to affect the system, it is not easy to obtain a perfect balance of effects, and this is made the more difficult from the fact already mentioned, that atropia has the greater duration of toxic activity.

8. The dry mouth of atropia is not made less by the coincident or precedent use of morphia; atropia does not constipate, and may even relax the bowels.

9. The nausea of morphia is not antagonized or prevented by atropia.

10. Both agents cause dysuria in certain cases, nor is the dysuria occasioned by the one agent relieved by the other.

11. Atropia has no ability to alter or lessen the energy with which morphia acts to diminish sensibility or relieve pain of neuralgic disease.

12. As regards toxical effects upon the cerebral organs, the two agents are mutually antagonistic, but this antagonism does not prevail throughout the whole range of their influence, so that, in some respects, they do not counteract one another, while as concerns one organ, the bladder, both seem to affect in it a similar way.

Dr. S. W. Gross (*Am. Jour. Med. Sci.*, Oct., 1869) speaks of a lady who took three grains of atropia. Three hours after symptoms of poisoning had set in, one-half grain of acetate of morphia was thrown in under the skin. The apparent effect was to relieve the trismus. In fifteen minutes half a grain of sulphate of morphia was injected. This brought down the respirations from twenty-six to twenty, but produced slight stertor, and effected no change in the pulse. After the lapse of an additional fifteen minutes—the respiration in the meanwhile having been irregular and feeble—another half grain was used. In fifteen minutes, the pulse was reduced two beats. The respiration was fourteen, and very decidedly stertorous; and the bad breathing continued for half an hour after the vigorous use of artificial respiration and faradism. A grain and a half of morphia, therefore, used hypodermically during the space of half an hour, merely intensified the poisonous effects of the atropia, and still further jeoparded life.

Dr. Geo. Harley (*Brit. Med. Jour.*, April, 1868), endeavors, by the recital of numerous experiments upon the horse and dog, as well as some on man, to prove "that opium and bel-

ladonna have not the antagonistic action which has been attributed to them," but, when used in combination, they increase the narcotic effects of each other. He gives four cases as proof. In the first, he injected one-fourth of a grain of sulphate of morphia in the arm; in the second, he injected one-fourth of a grain of sulphate of atropia—in each instance, the drug used producing its characteristic effects, except that the hypnotic effect of the morphia was incomplete. In the third, he injected one-fourth grain of the acetate of morphia, one hour after the injection of the one-fourth grain of sulphate atropia, claiming that it paralyzed the belladonna effects very considerably, also greatly increasing the narcotic effect of the opium. In the fourth, he repeated the experiment with the same result.

Dr. Corona says, with regard to the result of experiments on the alleged antagonism of atropia and morphia:

1. Morphia was always capable, even in very small doses, of removing the symptoms produced by atropia, and of producing sleep.

2. During morphia sleep, very large doses of atropia did not, in the least, alter the symptoms due to morphia, nor was the sleep ever found to cease.

3. When atropia was injected in small doses, at intervals of ten minutes, although the total quantity was large, its action was more rapidly extinguished by small doses of morphia, than when atropia was injected in a dose of not less than twenty centigrammes.

4. The injection of the two poisons into the veins showed that a much smaller dose was sufficient to produce rapid and grave poisoning; but, even then, the morphia produced its action instantaneously, and its symptoms always superceded those of atropia.

5. The injection into the veins of large doses of atropia, and very small doses of morphia, was always followed by sleep, and the manifestations of the symptoms due to atro-

pia, appeared in intensity proportionate to the largeness of the dose administered for the purpose of counteracting the symptoms due to morphia.

From these results, Dr. Corona concludes that a partial physiological antagonism may be recognized, but that the idea of a mutual antagonism, therapeutically, cannot be accepted.

The recent Edinburgh Committee, presided over by the lamented Dr. J. Hughes Bennett, concluded—

1. That sulphate of atropia is, within a limited range, physiologically antagonistic to meconate of morphia.

2. Meconate of morphia does not act antidotally after a large dose of atropia; thus, while atropia is an antidote to morphia, morphia is not an antidote to atropia.

3. Meconate of morphia does not antagonize the effect of atropia on the branches of the vagi supplied to the heart.

Both agents in question destroy life in the same manner. Opium is more antagonistic to belladonna, than belladonna is to opium. In opium poison, treated by belladonna, it should be suspended so soon as the pupil begins to dilate, for, after this, it intensifies the action of the opium. In the majority of reported cases of opium poisoning, treated by belladonna, the reporter acknowledges that either copious emesis, free stimulation, or faradism had been resorted to along with the belladonna.

ART. III.—*On the Prevention of Puerperal Eclampsia by Chloral.* By H. G. LANDIS, A.M., M.D., Professor of Obstetrics in Starling Medical College, Columbus, Ohio. Read before the Columbus Academy of Medicine.

Modern therapeutics require more than the empirical and clinical endorsement of a drug to entitle it to credit. Almost every drug has been used in every disease, and the physician who has reasoned himself into a belief of the efficacy of a particular mode of treatment, is loath to change it for a new plan recommended merely by the experience of

others. He demands some rational and probable account of its modus operandi to persuade him of its utility. In the present instance, therefore, it is necessary to speak, first, of the nature of the disease, in order to judge logically of its remedy; and we will confine our attention more particularly to the form of eclampsia which occurs during labor.

From the frequent association of eclampsia with albuminuria, the conclusion has been jumped at that uræmia is the exciting cause of the former. This, in turn, has been associated with pressure upon the kidneys, which derives probability from its greater frequency in primiparæ. Thus,* in 50,928 cases of labor occurring in Dublin, there were 138 cases, 79 per cent. of which were in primiparæ, and in 90 per cent. albuminuria was present. Barnes reasons more cautiously. He states that pregnancy and labor require for their due fulfillment an extraordinary supply of nerve force, which implies a corresponding organic development of the spinal cord. This is accompanied by an augmented irritability of the nerve centers. There are also blood changes entailed which increase this. "When the blood change is marked by albuminuria, a poisonous action of peculiar intensity is exerted upon the nerve center, tending to produce eclampsia." This is non-committal as to the precise nature of the poison. That it is not due to uræmia, is made clear by an important fact. In uræmia there is a marked fall of temperature. In a case observed by Hanot,† the temperature fell from 34° C. to 30° C. in one day, and to 20° C. just before death. In the eclampsia of labor, the reverse obtains, a temperature of 109° having been observed.‡ And this brings us to our first indication for a remedy to reduce temperature. The poisoning of the blood is, in all probability, not due to any specially deleterious substance, but to the hydræmia which is associated with the albuminuria. But,

* S. C. Busey, Phil. Med. Times, Aug. 5, 1876.
† Phil. Med. Times, Feb. 2, 1873.
‡ S. C. Busey, op. cit.

on this point, it would be wise to await better observed facts, than to evolve further theories without any substantial basis. The distribution of the blood is a matter of as much or more importance than its quality. Two opposite conclusions on this point contend for credibility. As a specimen of the one side, Dr. Carson* may be cited. In a learned article on the subject he records two cases occurring, the one while the head was at the perineum, the other after delivery. In neither were there any premonitory symptoms. He states that in both cases there was an *anæmic* condition of the nerve centers. But he also quotes Denman as denying any cerebral fullness in this condition. Now, if the cases were not more accurately observed than the writings of Denman, the anæmic theory is in danger from this witness. Denman states (page 518): "In the examination of many women who have died in convulsions, I have never seen an instance of effusion of blood in the brain, though the vessels were *extremely turgid;*" and in speaking of the treatment, he recommends that when the head is particularly affected we should add to general venesection from the arm, a lancet opening of the jugular vein or temporal artery, which would indeed be remarkable treatment for an anæmic condition of the nerve centers. Marshall Hall states that puerperal eclampsia resembles epilepsy, and Trousseau sees no *difference* in them. *Per contra*, Dr. John S. Parry, after a careful study of the subject, comes to these conclusions†: 1st. That epileptics rarely have convulsions in labor, and, (2d), that they are not more liable than others to have them. It is scarcely necessary to mention the authorities who record their belief in the existence of cerebral hyperæmia in this affection. The clinical history of the affection should be sufficient. A case will illustrate this point: B. M., æt. 26, primiparæ; six years married; short, stout, and plethoric; fell in labor July 25th. The membranes ruptured with the first pain, at 1:30

* Phila. Med. Times, Nov. 15, 1871. † P. M. T., Nov. 27, 1875.

P.M. Nothing of note occurred till about 11:30 P.M., when the head was engaging easily in the inferior strait. By this time she had become fidgety, bore her pains ill, and complained of violent headache. During a pain the facial muscles began to twitch, then came a general tonic convulsion lasting fifteen seconds, followed by clonic spasms of various muscles for about two minutes, succeeded by stertorous breathing, unconsciousness, and impaired sensibility. One or two feeble pains followed. There was slight frothing at the mouth, and the pupils were contracted except just before a convulsion.

The time of the labor during which convulsions come on is instructive as to their causation, being usually, as in this case, soon after the semi-voluntary bearing down efforts begin. During these efforts the body is more or less firmly set, the veins of the neck dilate, the face becomes red, and manifest interference with and engorgement of the cerebral circulation takes place. I am at a loss to understand how any other interpretation of the phenomena in these cases can ever have been thought of, however we may differ as to the proximate causes of the convulsions which precede or follow delivery. Thus we have two other indications to meet in combating this accident either preventatively or curatively, viz., to ward off cerebral hyperæmia and to lessen the irritability or, as Wigand terms it, the convulsability of the nerve centers. The first indication noted, viz., to lower temperature, is rather a curative than a preventive indication, and yet it will probably add to the safety of the patient if this is also provided for.

What agent fulfills all of these requirements? One important element is essential in a preventive remedy—it should be safe and innocuous even when given needlessly; for the weak point in all preventive therapeutics is that we can never be certain that we have averted an impending trouble. There always remains the skeptical presumption

that the same result would have followed if the remedy had been omitted. For this reason, blood-letting is scarcely a justifiable preventive. There are too many women of whom we may suspect a tendency to convulsions, but who entirely escape, to warrant us in the general use of the lancet; also, though powerful as a curative agent, because of its certainty in relieving cerebral hyperæmia and reducing temperature, it has not the like influence upon the irritability of the nerve centers, and the latter is a *sine qua non* in a preventive measure.

Chloral was first used in puerperal eclampsia in 1871, by Alex. Milne, and by Dr. ——, of Philadelphia, about the same time, or a little before, since which time it has had an extensive clinical indorsement; but we look, also, for an explanation of its action.

Rokitansky* states, as the result of his own and others' investigations, that chloral diminishes the excitability, more particularly, of the motor centers of the respiratory and abdominal muscles, and also the irritability of the vaso motor centers generally. It has, therefore, a direct controlling effect upon the cerebral circulation by this action, not only in diminishing the irritability, and, consequently, the convulsability of nerve centers, but also in diminishing the blood supply by its control over the vaso-motor centers. Liebreich and Richardson† find that it reduces temperature markedly, a fall of 3° to 4° F. being obtained by doses varying from forty to eighty grains. Bouchut‡ records a fall of 2° C. in an infant; and Hammarsten, in experimenting upon animals, found that the loss of heat was very rapid (6° C. in an hour).

We have, then, every indication fulfilled—an agent to diminish the excitability of the nerve centers, to diminish the cerebral blood supply, and to check the rise of temperature.

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* N. Y. Med. Jour., 1874.
† Fothergill, p. 102. Hand-book of Treatment.
‡ H. C. Wood, p. 290.

And this is all that we can at present expect to attain, since we have not as yet accurate knowledge as to any deterioration of the blood, and much less as to any method for its improvement.

In the case already recorded, the woman, after the usual course of venesection and artificial delivery, made a prompt recovery. She had albuminuria for some weeks after her confinement, but this also disappeared. In one year and four months she again fell in labor. It might be added that she had been subject to convulsions in infancy, and was very apprehensive of danger at this time. This was, therefore, a case where, if ever, we might anticipate convulsions, if left to take its own course. To complete the similarity, this labor began also with the rupture of the membranes. At the risk of being tedious, I report its progress in full, in order to show the promptness with which the chloral acted. At 1 P.M., two hours after labor began, the os was already an inch in diameter, but the pains were feeble and infrequent. She was very nervous, and complained greatly of frontal headache. At 2 P.M. she took chloral (gr. xv.), which speedily relieved the headache and nervousness, and coincidently the pains diminished, not returning with any force until 8 P.M., when the headache also reappeared. The chloral was promptly repeated, with a similar but shorter effect. Pains and headache were alike moderate until 2 A.M., when I found her with severe headache, restless, and during several pains had slight semi-convulsive movements of the arms and facial muscles. Chloral was at once repeated, and again in two hours. The pains continued feeble, but as their return in any force was always accompanied by threatening nervous symptoms, the chloral was continued. At 8:30 A.M., the headache being absent, and the patient having had symptoms of ague during gestation, I gave her gr. v. of quinine, without noticeable effect, unless the more regular occurrence of pains an hour subsequently could be at-

tributed to it. Chloral was repeated at 10 A.M., and by 11:30 A.M. the os was fully dilated, delivery being effected by 12:05 P.M. The last few pains were severe, but there was no headache immediately after delivery. Though it is fair to add that three weeks before delivery her urine was free from albumen, and was not subsequently examined, I can not avoid the conclusion that convulsions were certainly averted in this case.

ART. IV.—*Pumpkin Seed as a Tæniafuge.* By CHARLES B. WHITE, A.M., M.D., Surgeon U. S. Army, Columbus Barracks. Read before the Columbus Academy of Medicine.

MR. PRESIDENT AND GENTLEMEN OF THE ACADEMY: I propose to call your attention this evening to a remedy for tape-worm, that, I believe, is not now as highly valued as its intrinsic merits deserve, prefacing my remarks upon treatment, by a few, upon the nature of the entozoa in question.

Tænia, the generic name, signifies in its original Greek, a band or ribbon, and Prof. Heller of Kiel, the recent writer in Ziemssen's Cyclopædia of Medicine on this subject, seems to agree with his contemporaries, that three (3) varieties of tænia infest man, being first, Tænia Solium; secondly, T. Saginata (or medio-canellata); and lastly, the Bothriocephalus latus. The usual source of tape-worm in man is the introduction into his stomach of raw, or imperfectly cooked meat containing the cysticerci cellulosæ or larva of the first and second species, and the drinking of water containing the eggs of the third species (which seems to have no distinctive intermediate stage, as do the others). The Tænia elliptica (tape-worm of dogs and cats), and other rarer varieties *have been found* in the intestinal tract of man but rather accidentally, as it seemed, and not commonly enough to engage our attention at this time. The cysticerci of the true tape-worms have been found also in the brain and some other organs of

the human body, but so rarely as to have no practical interest in this connection.

The Bothriocephalus is said to reach frequently a length of twenty-five or more feet; the Tænia saginata, or *fat* tape-worm, coming next in size and length, reaching twenty or more feet; the Tænia solium comes last in size and length, and is called also the *thin* tape-worm, its average length eight feet: instances of much greater elongation are authentic but not usual.

The Tænia solium seems to be peculiar to man, never having been found or seeming to be capable of existence (except as a larva to infect man) in other animals. The most usual and favorite means of propagation of this animal is through its larva or embryos in swine-flesh, hence the Tænia solium is most abundant and wide spread where pork and its products are in favor and scarcely known elsewhere. The Tænia saginata is propagated chiefly by means of its cysticerci in the flesh of horned cattle; it is also capable of passing through its intermediate stage with other animals, but rarely affects them; hence we find this worm excessively common in Abyssinia, where raw, and even warm and still quivering cattle flesh, is so highly esteemed as an eatable.

Dr. Heller states the aquatic origin of the Bothriocephalus, and quotes Knoch, of St. Petersburg, as believing that the eggs, introduced into the intestinal tract of man, develope at once into tape-worms, but, he himself sets forth the idea, as rational by comparison, that even with this worm some aquatic animal may usually act as intermediary, and the larva resulting then reach man. The limited distribution of this worm, being found in Europe only, and its prevalence among peoples using fish food largely, such as the Swedes, Finns and Baltic Russians, tells its history. Dr. Heller believes that accounts given of the B. latus as occurring outside of Europe can be reconciled by the confounding of the T. Saginata with its congener.

The B. latus and T. saginata are alike in being attached by suction disks, on their heads, to the mucous membrane of the upper third of the small intestine. The T. solium has similar suction disks and furthermore a circle of hooklets on the top of its head, doubtless used for firmer attachment; it, also, is found attached in the upper third of the small intestine, and is said to yield to medication more readily than the saginata.

The bodies of these animals grow from the heads by a species of budding or gemmation, and the tapering neck, large body and proliferating segments (dropping off from the lower end), all draw their nourishment through the suckers aforesaid; the joints passed are hermaphroditic and are full of ripe, fecundated eggs, seeking a field for development.

The age to which tape-worms can attain, is not known. Mosler reports, in Virchow's Archives, 1873, a case of a butcher, who had removed, fourteen years before, from Russia to a locality not affected by B. latus, which worm he was then passing segments of. As already stated, these worms seems to obtain their nourishment through the free suckers around their head, from the products of digestion flowing through the intestine in which the head is located.

Prophylaxis.—The Tænia solium being most common in the United States, and its usual source the flesh of hogs, it would naturally occur to us that supervision of the food of these animals, would control the occurrence of entozoa in them, and such is found to be the case. In Asia and Africa, hogs and even neat cattle are frequently scavengers over localities visited by human beings for the purposes of nature, and a fearful spread of entozoa among both men and animals is the result. It is well known that hogs having the run of slaughter yards and sewers, are always more liable to disease and to the occurrence of entozoa, than grain-fed and carefully kept swine. Careful inspection of doubtful meat often develops the fact of its being infected, and its consequent

avoidance. Sufficient cooking of the meat insures the innocuity of cysticerci.

Diagnosis.—Many of the symptoms described by the older writers as peculiar to patients affected by tape-worm, I believe to be unreliable. They may occur, but they may also occur in parties affected, only, by dyspepsia, hysteria, gastralgia, etc. The safest rule is to treat a person for Tænia only, after the observation of ripe segments of the worm being passed from time to time—during fasting and after the administration of remedies, a gnawing feeling at the epigastrium is frequently present—there may be present some emaciation, with increased and irregular appetite; but I have frequently been applied to for relief, by parties in good health and nutrition, with no other proof of having tape-worm than the passage of its segments. However, they seemed to think it a great disgrace to have it, and were in low spirits from this cause.

Writers do not refer to power of mobility as possessed by the extruded segments of the Tænia solium, though ascribed to those of the dog's tape-worm; but patients have told me that several hours after a passage from the bowels, when the utmost cleanliness had been observed, they have found segments of their worms scattered around their under clothing, near the anus, which had apparently found their way out through the sphincter ani.

I have found cooks more frequently affected than other persons, their handling of raw meats apparently putting them in contact with proliferating germs.

History of Pumpkin Seed as a Remedy for Tænia.—In 1820, M. Mongeny, a physician of Cuba, published his experience with the *flesh* of pumpkins as a Tæniafuge. Messieurs Brunet and Lamothe, of Bordeaux, France, published in 1853 (Annales Ther.) a verification of the value of pumpkin, but preferred to use a paste of the seeds. In this country in 1851, Dr. Richard Soulé published in the Boston Medical and Surgical Journal, a recommendation of these seeds, and Dr. J.

S. Jones, of Boston, is said to have previously used them. The United States Dispensatory for 1858, gives Cucurbita Pepo as a remedy for tape-worm, dose one and a half ounces of the dried seeds. Flint's Practice of Medicine, edition 1868, mentions emulsion of pumpkin seeds as a Tæniafuge, but contemplates repeated doses, and values the remedy chiefly as being innocuous.

The German Journal of Pharmacy, No. 55, 1877, commenting on the researches of Dr. Heckel, of Nancy, says: "In the French trade pumpkin seeds are derived from Cucurbita Mayima, C. Pepo and C. Moschata, which are equally serviceable against tape-worm, while the black seeds of C. Melanocarpa or the seeds of the closely related genus Cucumis are entirely devoid of medical value, since the two latter lack the very membrane in which the active principle resides. Four layers of covering are described for these seeds, and the fourth or innermost coat, which has a dark green color when fresh, changing gradually to greenish yellow, has a chartaceous appearance and consists of two layers; the outer one, made up of hexagonal or pentagonal cells with moderately thick walls, including chlorophyl and a resinous mass; the inner one formed by elongated cells including starch. The resinous mass in the outer layer of the fourth or innermost coat of the seeds is, according to Heckel, the active tænicidal principle, and not, as has been supposed, the fatty oil residing in the cotyledons. Owing to the absence of this papyraceous membrane, which alone contains the resin, in other cucurbitaceous seeds, these latter are inert. At the same time it is shown that even active seeds become inert, when they are blanched in a fresh state, as all the coats are thereby removed."

Administration of the Remedy.—It facilitates the action of tænicide medicine, and especially facilitates the observation of the dejecta, to have the bowels rather free beforehand.

An absolute fast, from all solid and nutrient food, should

be kept for twenty-four hours, then, for example, the fast having been from supper of the previous evening, say at five or six o'clock P.M., administer two ounces of sun dried seeds of well matured pumpkins, denuded after weighing, of their outside coat, being careful to leave the greenish inner layer with the kernel. The prepared seeds may be advantageously powdered in a mortar and eaten with a spoon; some practitioners like the addition of some sugar or of sugar and warm water, to make a sort of emulsion, but these additions are not necessary. In from five (at least) hours to eight or twelve hours later, still maintaining an entire fast, two ounces (or less if it will operate) of castor oil may be administered. All the evacuations, for some hours thereafter, should be kept for examination, for the worm does not always come with the first or second passage, even when already dead. From the close approximation in appearance of many bits of the seeds to the head of the worm, and the fact that the seeds, like worm fragments, are heavier than the water used for washing off the dejecta, this remedy makes the securing of the head of the worm very difficult; but writers on this subject consider it nearly impossible that the head could survive the loss of the body and part of the neck. The hooks of this animal probably prevent its head from coming away as readily as otherwise, even when dead. In several cases coming under my observation where the head was not found, the worm, entire in its body and comprising the small segments near the head, was tied up in knots, and the patients had been aware, within an hour or so after taking the dose, of much disturbance referred to the region of the stomach, and no further segments of tape-worm were passed subsequently.

This remedy is so harmless as to admit of its trial in special cases, where severer drugs would be inadmissible, and yet, where relief was all the more desirable. Your essayist was first led to use pumpkin seeds in this class of diseases, by

the absence of reliable samples of more approved tæniacide remedies, and after seven years of experience with the remedy, believes it to be as reliable as those more costly and rare. It is his belief that the worm first attempts to feed upon the oily and starchy portions, and is subsequently poisoned by the resinous matter of the inner coating of the seeds, hence the cathartic must not be given too soon or it will prevent the desired result.

CLINICAL LECTURES.

LECTURE I.

CLINICAL LECTURES ON SURGERY, DELIVERED AT STARLING MEDICAL COLLEGE, COLUMBUS, O., BY J. H. POOLEY, M.D., PROF. OF SURGERY.

ART. V.—*Cancer of the Breast, Chronic Periostitis, with Ulceration, Fracture of Clavicle, produced by Muscular Contraction, Depressed and Adherent Cicatrix of the Face.*

Case 1. Miss F., æt. thirty-nine; born in Ohio; farmer's daughter; in comfortable circumstances. This lady comes to consult us with regard to a lump or tumor in her right breast. She is, as you see, very thin, somewhat pale, and, though habitually quiet, reticent, and self-controled, of a nervous temperament.

How long this tumor has existed she does not know. She first discovered it about a year ago; it was then very nearly as large as it is now. It is not the seat of any pain, except for a short time after being handled. You can scarcely see it, but, upon palpating the breast, you discover at once, just external to, and on a line with the nipple, a hard lump or nodule about the size of a horse-chestnut, and situated pretty deeply in the substance of the breast. Now, let me direct your attention to a few points, brought out by the examination of this tumor;—points both affirmative and negative.

First, then, notice the consistence of this growth; it is

hard, and firm—very hard for a fleshy growth. It has, as you squeeze it between your thumb and fingers, a peculiarly, incompressible feel, quite difficult to describe, but very distinct from that of some other firm tumors; there is no elasticity about it. Notice again, that, though it and the gland around it move freely on the pectoral muscle beneath, though there is no adhesion to the skin over it, and no discoloration; and, though you can define its boundaries pretty well, still it does not move freely in the substance of the mammary gland, but seems, to some extent, to be amalgamated with the gland tissue around it. You will notice, too, that, as already said, there is no implication of the integument, no retraction of the nipple, and no discharge from it.

This examination has satisfied me that we have to deal here with a case of hard cancer, or schirrus, of the breast. Let us subject this diagnosis to some criticism. And as against it, no doubt some of you will promptly remind me that this patient denies all hereditary influence, and, though pale and thin, certainly presents nothing that even an imaginative observer would call cancerous cachexia, and has no pain of a severe character; indeed, none at all except what is provoked by handling.

Well, I am glad to have these very points raised, for they are important points, and I have something I wish to say to you about them. They are important points, but I think their importance has been very much overrated in the past. That cancer is occasionally, or even frequently, hereditary, no one can deny, but that it is always, or even generally so, I do not believe. My experience in the matter, which has been neither exceptionally large nor small, but just about ordinary, would lead me to make the statement that in at least half the cases no hereditary influence could be traced. I am not able to give you, in detail, any statistics from the experience of others; but that is of less consequence, inasmuch as they are as accessible to you as to me, and you may consult them at your leisure. I

only wish to express the opinion that the importance of this fact, in the history of such cases, has been much exaggerated, and that for purposes of diagnosis it is not to be relied upon at all. As for the so-called cancerous cachexia, I must confess that for me it has no significance whatever, scarcely even an existence. I have never seen anything of the sort early in the disease, and in advanced stages, though the patient often looks pale and worn, and emaciated enough, I have never been able to distinguish between it and similar appearances presented by patients in the advanced stages of other exhausting maladies. Nor is pain a necessary symptom of cancer; in many cases—the proportion I have no means of knowing—it does exist, and sometimes to a most terrible degree, so as to require very large and constant doses of opium to keep it even partially in check; but this is generally in the later stages of the disease, and during the early period of the case it is quite commonly altogether absent, or nearly so, and it is astonishing to see, sometimes, how far cancerous destruction will advance without giving rise to much pain.

We regard, then, these facts and symptoms, that are absent, as of the least importance; and, on the other hand, we have a tumor developed in the mammary gland of an unmarried woman of thirty-nine. This is of itself a suspicious circumstance. The age is about that of the greatest prevalence of mammary cancer, and the unmarried of this age are especially liable to it. Then the peculiar, inelastic hardness of the growth, and its apparent infiltration into the gland tissue, are very characteristic. There is no implication of the integument or nipple, or axillary glands; it is too early in the history of the case for that; no doubt all these complications would make their appearance in time.

We shall not here enter into any of the interesting questions relating to the structure, pathology, or history of cancer; these will be dwelt upon in their proper time and place; but

as other patients are waiting to present themselves, proceed to that which is immediately practical, and inquire what advice we shall give this lady. And here we have no hesitation as to the proper course to pursue, which is to advise the immediate removal of the affected breast; and, while our patient, who has come here for that very purpose, is being etherized, we will make some brief and general remarks on the operation.

You are probably aware that a difference of opinion prevails to some extent, as to the advisability of operation in these cases. Some, but they, I think, are a very small minority, discountenance it altogether, on the ground that cancer being a constitutional affection, the operation can, at best, only remove a local manifestation, which is sure, in no long time either, to recur *in loco*, or make its appearance elsewhere.

I do not think that sufficient ground, either theoretical or practical, can be found for such a dogma as this. The question as to whether cancer is primarily a constitutional affection, or at first local, and eventually affecting the whole system, is by no means settled; there is much to be said on both sides, and while this is so, it seems to me that early removal is not a choice, but a duty. But, what is of more consequence, there is no lack of evidence that occasionally no recurrence takes place; and the patient is really, thoroughly, and permanently cured by the operation. In view of these considerations, there are very few practical men who would hesitate in the case before us to recommend, or even urge, an operation. Unfortunately, however, the majority of the cases we see are not so favorable as this; and we have to ask and answer another, and a far more difficult question, viz.: in how bad a case are we justifiable in operating, and when ought we to refuse? And here we are beset with difficulties; indeed, it may be safely said that it is simply impossible to formulate a rule that will meet with the approbation of every surgeon, or suit every case.

The best I can do is to give you my opinions—opinions which I have tried to form carefully and conscientiously, on some of the points at issue. First, then, the mere size of the tumor has nothing to do with the question of removal, but *mere* size has very seldom to be considered; if the growth is considerable other elements come in.

There is more or less implication of integument, and when this is extensive it is a very forbidding circumstance, and ought generally to preclude an operation, except in a few cases where the cancer is what is called an open one with, great pain and offensive discharge, and yet the patients general powers are pretty well sustained. Here you may give great comfort, and perhaps prolong life, by removing the source of offence, and substituting for a time at least a clean, healthy sore, and I think you are in duty bound to do it. You do not cure, you do not get great glory, but in the beneficent art of surgery, we must learn to forget ourselves and act for the good of others, and where a conquest is unattainable be content with a truce.

When, together with large size, the tumor is firmly and extensively bound down to the pectoral muscle, you will hardly ever think of operating, though under the circumstances, and with the view spoken of just now, it may sometimes be right to do so. When the axillary glands are much involved, an operation is as a rule unadvisable; two or three enlarged glands may be removed without adding much to the severity of the operation, but when there is an ill-defined mass matted together in the depths of the axilla, such a thing is not to be thought of. The statistics of removal of the female breast for cancer, are very much vitiated, and seem to me almost of no worth at all, for want of discrimination between those cases in which it has been done late or early in the disease.

The outlook as far as it has been presented to us by such estimates is, it is to be confessed, sufficiently gloomy; return

of the disease is the rule, and the average duration of the interval before the return takes place is very little more than two years.

Still for all this I would advise operation, except in a few such extreme cases as I have already pointed out, for the period of freedom, however short, is a great relief, and fully worth the price paid for it by submitting to an operation; and if the disease returns it may be in an internal organ where death will be more rapid and painless, and free from the mental torture, and the personal offense which is so often the worst part of death from external cancer.

Now a few words as to the operation itself. And first never think of anything less than the removal of the whole breast in these cases.

Merely to remove the tumor is to invite return; to be as useful as we have a right to expect them to be, operations for cancer must be done early and done thoroughly, no avoidable risk must be run of leaving any of the diseased germs behind.

In old times the removal of the female breast was a terrible operation, and left a horrid scar; it is enough to make one shudder to look at the plates of the instruments used, as given in Heister's Surgery, for instance, about a century ago. First, there was a great forceps, looking like a pair of rounded callipers, or a spear or fork with one, two or three prongs to transfix the base of the mamma, and then with a razor the whole thing was shaved off even with the surface, and this terrible wound left to granulate and cicatrize as best it might.

Now, by well planned incisions we are generally able to save integument enough, as you see here, to close the wound perfectly with sutures, and as a rule get very prompt union.

You observed that two curved incisions, one above and one below the nipple and extending from near the axillary border downwards and inwards, were made, inclosing a narrow ellipse of integument with the nipple in the middle, the

skin slightly reflected above and below, and the gland quickly and cleanly removed clear down to the fibres of the pectoralis major muscle, which you observe smooth and unruffled at the bottom of the wound. The edges of these two incisions come neatly together without traction, and should the wound heal kindly a mere linear scar only will result. Only one vessel has been ligated, and that with a very fine ligature, though at first a number were seen spouting, but a few moments exposure to the air sufficed to stop all but this one, and of course it is very desirable to have as few ligatures depending from the wound as possible.

There are two things which, if you will remember, will much facilitate this operation, which should always be done quickly, simply because it can be just as well as not. First, make your lower incision so that the position of it may not be obscured by flowing blood, as would be the case if the upper one were first made. Make these preliminary incisions deeply through skin and fat, so as to come down at once on the gland tissue; this greatly facilitates the matter, and saves what may be a rather tedious and bloody dissection; then sieze the gland with the left hand and drawing it firmly forward, separate it by quick bold strokes.

Now for the dressing: Wait for the principal bleeding to cease or to be arrested; it is not necessary to wait for all oozing to stop and the wound to glaze, as it is called. Close the incision neatly by numerous pretty fine interrupted sutures, except for about an inch at one end through which the ligatures may be drawn, and then, which is the most important part of this dressing, apply a firm even compress and bandage. This compress and bandage, are in my estimation, worthy of your serious attention, for if neatly and firmly applied, they squeeze out any blood contained in the cavity of the wound, maintain its sides in apposition, and do more than anything else to promote immediate union. This dressing need not ordinarily be removed for three or four days,

then perhaps a considerable portion of the wound will be found healed, perhaps all the sutures may be removed, at any rate every alternate one may; strips of plaster may take their place where necessary, and the wound again left for two or three days. I have often thought that such wounds are too assiduously dressed, and some experience of this opposite plan has convinced me of the fact, especially in this particular operation.

It requires some little care and attention to thoroughly compress and bring together the sides of such a cavity without making painful or injurious pressure, but it is an art well worth striving for. Let us now examine our tumor. As I slice it in two you observe it cuts firmly, creaking under the knife, and the section looks remarkably like a slice of a raw white turnip.

Dr. Frankenberg, Professor of Pathology, subsequently examined the tumor and pronounced it a typical example of schirrus cancer.

The patient was so far recovered as to be able to go home, a distance of thirty miles in less than a week, the wound nearly healed by first intention. I have seen her two or three times since, and at the expiration of two years, there was no sign of return.

The cicatrix was a narrow line, the skin around was soft and pliable, quite free from any adhesion to the parts beneath, and the lady's general health was very much improved.

Case 2. L. A., a young woman æt. nineteen; red hair; pale, thin, transparent skin, of the appearance commonly known as scrofulous. She has had, for over four years, ulceration of the anterior surface of both legs, with extensive enlargement of the bone. On both limbs there is a large ovoid, not very prominent swelling of the bone, about three and a half inches in length, by one and a half in width. Several indolent ulcerations exist on the front of each leg,

and that part of the surface not ulcerated presents evidence of having been so in the presence of thin, red, shining, cicatricial tissue tightly adherent to the bone. No portions of bone have ever escaped spontaneously, but on one occasion, about a year before my assuming charge of the case, some insignificant portions were removed by operation. These do not appear to have been detached, but were probably roughened or elevated excresences from the surface, which were forcibly removed. No benefit seems to have resulted from this operation. Her general health seems most of the time to be fairly good, though she is of feeble vitality. She eats well; all the functions seem to be normally performed, except menstruation, which has been absent for about a year.

She has very little pain in the affected parts, only occasionally dull, heavy aching.

But no treatment, either general or local, seems to benefit her, though everything that gave any promise of usefulness has been tried by many advisers. Under the free use of iodide of potassium, combined with iron, and a variety of local applications, of which it could not be said that one did any more good than another, the right leg got nearly well, but the left, though apparently healing at one point, constantly broke out in another, and, on the whole, became worse; indeed, after four years of thorough trial, it is apparent that it is practically incurable. The whole of the limb, from the knee to the ankle, and half way round its circumference, is either the seat of persistent ulceration, or of the tightly-drawn, shining cicitricial tissue already alluded to, and presents not the faintest prospect or possibility of recovery.

In this condition, without warning, without pain, or any cause that could be discovered, the thin cicitricial tissue around the ulcers fell into a condition of gangrene, which spread rather rapidly, becoming very offensive.

Despairing of success in our efforts at cure, amputation

was proposed, and promptly acceded to by the patient. The limb was removed just below the knee, and for ten days the patient seemed to be doing tolerably well, though the healing processes were very sluggish. At this time the integument covering the stump, though apparently healthy, became gangrenous. The patient had irritative fever, purpuric spots, some of them of large size, made their appearance all over the body, and she quickly sank and died.

No post-mortem was made. An examination of the amputated limb showed the cicatricial integument so closely united to the superficial surface of the tibia that it could only be removed by maceration. After maceration, the bone presented a long fusiform enlargement, projecting not very prominently from the anterior surface, roughened by numerous, closely-approximated grooves running longitudinally along its surface.

This case I regard as an interesting and extreme instance of a disease I have been observing with interest for some time, but which I do not remember to have seen much notice taken of in books. It is a chronic periostitis of the superficial, or anterior surface of the tibia. As far as I can make out, it does not seem to owe its origin to any uniformly acting cause, but arises in a variety of different conditions.

I have seen it in pale, anæmic patients, like the present, of lymphatic temperament, commonly called scrofulous; also in those to whom no such vice of constitution could be attributed, but who seemed perfectly robust and healthy, and arising spontaneously, as well as caused by some apparently trifling injury. I have observed one case in an elderly man, whose constitution seemed to broken down by the long-continued poisonous effects of lead. I have seen it at all ages, except early childhood and extreme age, and have never observed it in connection with a well marked syphilitic taint. It lasts for an exceedingly long time, seeming,

indeed, unless influenced by remedies, to be quite indefinite in its duration; it is not accompanied with severe pain, oftentimes with scarcely any. In every example that I have seen, it has been associated with superficial ulceration of an obstinate or intractable character; this may have been provoked by some external injury, like a slight abrasion, or have come on apparently from the progressive thinning and starving of the integument, by the swelling from beneath.

Frequently, but by no means uniformly, there is an exfoliation of small, superficial plate or scale of bone, and in these conditions it is allied to, if not identical with, a peculiar form of necrosis of the tibia, described by Mr. Thomas Whately, an English surgeon, in 1815. It sometimes, but rarely, I think, follows fevers, and other exhausting diseases.

Its pathology I imagine to be as follows: The periosteum, being the seat of slow inflammatory processes, deposits an exudation upon its under surface, which very gradually becomes organized into more or less perfect bone, or perhaps the bone partakes of the disease, and thows out proliferations in the shape of layers or ridges of ossific deposit. By the increase of this bony formation, the periosteum is not separated from the bone but more intimately connected with it, and the swelling, by pressure, encroaches upon the integument, until this, crowded and thinned, and deprived of part of its sustenance by fibrinous exudations in the sparse areolar tissue of the part, either spontaneously, or in consequence of some trifling violence, falls into a condition of ulceration, which, from the conditions causing and accompanying it, is very difficult to heal.

This is the only case of the kind I have ever seen where amputation was demanded; and here, I think, we may fairly question ourselves whether the amputation should not have been done sooner.

The ulceration, for a long time, had shown itself insucep-

tible of cure, there was no normal tissue beneath as a basis for repair, and for an extensive area around there was nothing but cicatricial tissue, which could barely support its own existence, and could not be expected to contribute to the healing, and yet, so averse was I to the thought of amputation, that, though fearing it must come, I refrained from proposing it, until the gangrenous breaking down of this half-vitalized sear tissue, never again to be reproduced, as I believed, made it the only resort. Even now, I must declare, that this girl's death, after the operation, is as inexplicable as it was unexpected. This condition of local gangrene in an apparently healthy stump, with general purpura, is new to my experience. We had no pyæmic, gangrenous, or erysipelatous case in the house at the time.

Generally though slow to be affected, and obstinate to a high degree, I have found these cases amenable to persevering treatment. Rest, with the limb elevated, strapping and bandaging, or other appropriate measures for the ulceration, with the persistent use of iodide of potassium, are the means I have to recommend.

With regard to the use of iodide of potassium, I have some things to say to you which I think are of importance, not only in cases like the one at present under discussion, but as general rules for the administration of this drug, and which will make all the difference between its efficient and inefficient use.

In the first place, it should be given persistently and continuously. It is generally prescribed in chronic conditions where the more stable and enduring results of inflammation are to be removed, and where time is an essential element in the treatment. It is a drug that produces its results slowly, and, therefore, if we expect to gain all the good it is capable of effecting, we must maintain its influence upon the system for weeks, and even months, at a time.

Again, it should be given freely; indeed, I think many of

the disappointments experienced with it arise solely from its being exhibited too timidly. Begin with a small or medium dose, say five or ten grains three times a day, and gradually but steadily increase the quantity as long as it is tolerated by the patient, being guided, not by the amount taken, but by the effects. Oftentimes very large doses are not only well borne, but produce the best effects. I know, from experience, that an ounce or more of the salt may be taken in the twenty-four hours with marked benefit. Take care, however, that when ordering large doses, it is sufficiently diluted; give it dissolved in plenty of water, or, what is perhaps more agreeable, and answers the purpose equally well, direct the patient to take a copious draught of water after each dose of the medicine. It is often an excellent plan to combine the iodide with some tonic, such as an appropriate dose of a bitter infusion or tincture, such as gentian or cinchona. This will often procure tolerance for it, and prevent its disagreeing with the stomach or impairing the appetite.

In anæmic cases the iodide may be combined with iron, an elegant mixture of this kind being a combined solution of iodide of potassium, and the soluble citrate of iron, in the proportion of about ten grains of the latter to the dose. This solution is perfectly clear, and makes a handsome and not unpalatable medicine to take. Besides its use in cases where you are aiming mainly at the specific effects of the iodide, I think that this combination increases the efficacy of the iron, and I am frequently in the habit of combining small doses of iodide of potassium with iron, given merely as a tonic, in anæmia.

One other practical hint in the continuous use of the iodide: I think it acts better if, during its administration, you make use of an occasional purgative, say once every week or ten days.

Following these suggestions, feeling your way with the remedy, looking out for idiosyncrasies, you may give very

large doses, and for a very long time, with great advantage; and indeed, it is the remedy above all others to be recommended in these very cases of chronic periostits of the tibia, with ulceration.

Only it must be given thoroughly and perseveringly, or it will disappoint you, and lead you to form a very inadequate idea of its powers. I know I have seen very obstinate cases of the kind recover under its use. Just a word with regard to the local treatment of the accompanying ulcers. They do not bear strapping, or any other harsh or very energetic treatment; the surrounding integument is too thin, and devitalized by pressure from beneath. Soothing or inert applications, with the support of a well-applied bandage, seems to serve best. A *well-applied* bandage, I repeat, because everything is contained in that; it should be smoothly and firmly, even tightly applied, and this can only be done when it is applied with perfectly uniform pressure all the way up, a thing, simple as it seems, not to be accomplished without care and practice both.

Case 3. This man is brought before you this morning, gentlemen, as an example of two rare and interesting facts: First, fracture of the clavicle by muscular contraction; second, recovery from the accident without surgical appliance, and without deformity.

His age is thirty-eight; he was born in Germany; his occupation, driver of a brewery wagon; and he is, as you see, a man of wonderful muscular development, being, as one may say, a perfect Hercules; indeed, I think I never saw such chest and arm muscles in my life. This is still striking, though he has been sick in bed four or five weeks with fever, though not to the same extent as when I first saw him. The fracture, which was of the left clavicle, occurred to the patient while throwing a beer keg upon a loaded wagon, and was at the usual situation, near the middle of the bone, presenting all the usual and well-known symptoms

of the accident, which we will not now stop to describe, as they are well known to all of you. Fracture from muscular contraction alone *may* occur in almost any bone of the skeleton, but is rare enough in the clavicle to be worthy of special attention and comment. Contrary to the rule usually observed in fractures of this kind, it was in this patient oblique, as fractures of the clavicle generally are, and presented considerable deformity, quite as much as we generally observe.

According to Prof. Frank H. Hamilton, our great authority on the subject of fracture, fractures from muscular action occur most frequently in the patella, calcaneum, humerus, femur, tibia, and olcranon process of the ulna. Prof. Parker, of New York, relates a case of fracture of the humerus in a negro preacher, which occurred in the act of gesticulation; he must have been a vigorous expounder of the word. Another case of fracture of the humerus occurred in the effort to extract a tooth. Prof. F. H. Hamilton says he has once known the clavicle broken by muscular action alone. "A large, well-built and healthy man, aged thirty-seven, standing upon the ground, attempted to secure the braces of his carriage top with his right arm, when he felt a sudden snap as if something about his shoulder had given way. A similar case is reported in the number for January, 1843, of the American Journal of Medical Sciences, copied from the Revista Medica. The subject of this case was a colonel of cavalry, about sixty years of age. In mounting his horse he experienced a sensation as if something had broken, followed by acute pain in his left shoulder, and, on examination, it was found that the clavicle was fractured in the middle. Malgaigne has recorded three other examples of fracture of this bone, from muscular action; and Parker saw a case which was produced by striking at a dog with a whip." To these six cases I would add one reported by Dr. W. E. Whitehead, in the Pacific Medical and Surgical Journal for March,

1871, the one now before us, and one other of which I have heard, but did not see, making nine in all.

This last case is worth a moment's further notice, inasmuch as it occurred in a child, and is the only case of that kind that I know of. The child fell upon its back, striking, according to what appeared to be a reliable account, on no other portion of its body. It was found to have, in addition to a simple bruise over the back, a fracture of the clavicle. Though this accident did not occur in a way similar to the other cases, still it seems to me most probable that the fracture was produced by muscular action.

Of course I am not to be understood as intimating that this list of nine includes all the cases of fracture of the clavicle from muscular contraction, only those which have incidentally come to my notice, without making any special search for them. Though it is somewhat rare for fractures to occur as the result of muscular contraction alone, still as *part* of the mechanism producing those fractures said to result from indirect violence, I believe it is a constantly operative factor. It is because of the instinctive contraction of the muscles in the act of falling, etc., that the bones are rigidly fixed and held in such a way as to be most easily broken, when, if this influence was absent, they would very frequently escape; it is only on account of the complete muscular relaxation that exists in such cases, that we can account for the marvelous escapes from broken bones of thoroughly intoxicated persons. We may say then, that by far the commonest cause of fracture, is the combination of muscular contraction with indirect violence. The effect even of direct violence may be very much increased by the same influence, as, for instance, in those cases where a direct blow is brought to bear upon the patella, at the moment when the powerful extensor muscles of the thigh are forcibly or spasmodicaly contracted, of which I have seen several examples.

There is one peculiar form of fracture, of which it has been

my fortune to see an unusual number, the mechanism of the production of which I feel sure is quite often misunderstood. I allude to fractures of the neck of the thigh bone occurring in old people, particularly old women. These accidents quite often occur from the most trifling falls apparently, not infrequently the following is the sort of history given: The patient, an old woman, has got up from her chair to walk across the room, and has fallen without any apparent reason, it is assumed from tripping over some irregularity of the carpet or some similar trifling obstruction; she is found to be disabled and unable to rise, and examination reveals a fracture of the cervix femoris. Wonder is expressed, perhaps, that so serious an accident should have been produced by so slight a fall. Now I do not believe that in most of these cases the fall produced the fracture at all, but on the contrary the fracture produced the fall. We know what changes take place in the neck of the thigh bone in advanced age; the angle at which the cervix joins the shaft of the femur, approaches nearly to a right angle, and the cortical shell becomes very thin, the spaces between laminæ of the cancellous structure enlarged, the laminæ themselves very much attenuated, and under these circumstances, under the influence of perhaps some unusual contraction of the muscles, the fragile neck gives way and the patient falls to the floor, and is supposed to have broken her thigh in the fall. In cases which I have examined, the patient has been observed to fall forward, or huddled together in such a way that it was almost impossible to understand how the fracture could have resulted from the fall. I am satisfied that it did not, but, as already stated, the fall resulted from the fracture. I should like to pursue this subject of the direct causation of fractures still further, as it presents much opportunity for interesting and useful remarks, but we have no time now, and I must be content to urge the subject upon your future

attention, both with regard to fractures in general, and special forms of fracture. Now, with regard to the treatment of this patient, which has resulted so admirably. It was not intentional, or at least not premeditated. He came in just before one of my clinical days, and it was my intention to have brought him in and applied some form of apparatus before you, but by the time the day arrived he was sick in bed with fever. I determined to keep him flat on his back, with a pillow between his shoulders, and his arm hanging over it. This was not difficult, for during three weeks he was so stupid with fever as to be quite indifferent as to what position he was placed in, or what was done with him.

The result is very interesting, as proving by the event that this is one of the best, if not the very best method, theoretically, of treating fracture of the clavicle. It is interesting, furthermore, as showing that a severe febrile attack does not necessarily interfere with the reparative process in a fractured bone, for this man has made, while lying sick with a fever, a recovery from fractured clavicle in the usual period of four weeks, with the least deformity I ever saw after the accident; indeed, with scarcely any at all.

You will not, however, be able to imitate this plan of treating fractured clavicle; it is altogether too irksome to be employed in a person in health. Such an attempt is entirely out of the question.

You will therefore ask me what form of dressing I would recommend for fractured clavicle, as a general rule, and I must try to answer your question. I shall not go into a lecture on the subject of fractured clavicle, or even attempt to say all that might be said, or perhaps all that ought to be said on the subject of its treatment.

There is no surer index of the difficulty of satisfactorily treating an accident or disease than the multitude of appliances or remedies that have been suggested.

Judged by this standard, we should conclude that fracture

of the clavicle was a difficult accident to treat satisfactorily, that is, so far as to obviate all deformity from the accident, for a very respectable volume, as to size, might be filled with the descriptions of the various apparatus and dressings that have been devised for this purpose. And I am obliged to say I think we should be correct in this judgment. I have tried many of these appliances, and though they have been recommended by their authors or inventors as leading to perfect results in their hands, such has not been the case in mine, and to speak the honest truth, I do not believe I shall have perfect results in the treatment of fractured clavicle, until I have devised a plan of treatment of my own, which I have not yet done, and see no immediate prospect of it, for the ground has been so thoroughly covered that I am afraid to try for fear I should only reinvent some one else's method.

Now, all that I have said is no excuse for our indolently resting content with imperfect results, and true as I believe it to be, I would never have said it if I thought you would so pervert it. Nothing can excuse us from striving, in every case, to attain an absolutely perfect result, and it is only by working in this spirit that we can hope to accomplish the best that is possible, or improve what is imperfect. Besides, when I speak of imperfect results, I do not mean such as interfere with the usefulness of the limb, or leave great and glaring deformities; these would be indeed inexcusable. But there is not, as far as I have seen, that exact coaptation of fragments, that absence of any sign of the accident, which the descriptions of some writers seem to imply. I do not mean to say any of these writers are dishonest, but they seem to me to use language with an inexactness they hardly realize, or else they scan their results with a more indulgent eye than they would another's. To have done with a strain of remark which seems invidious, and yet which I think absolutely necessary, let me say, in further explanation, that I by no means deny that occasional results are attained that are al-

most, if not quite, perfect; but, gentlemen, depend upon it, when such occur they are not the necessary, much less the invariable result of any special plan of treatment. It makes a great deal more difference who puts on the apparatus than whose apparatus is put on.

The principal improvement of the present day is the use of the various forms of adhesive plaster dressing now in common use. Every now and then I notice some new modification of this dressing, which is supposed to be a great improvement, and so it might be if every case, even if fractured clavicle was like every other; but such is not the case, and it is far better to learn the indications to be fulfilled, and then adapt the means to each case, as far as the modification of the essential principles is concerned. To carry the arm backwards, and the elbow well upwards, are the essential points; and it is not generally difficult by these means, and some other slight and simple maneouvre, to bring the fragments into temporary apposition; the difficulty is to maintain them there, and this may need modification of any of these plans. I shall not stop to describe the method of applying the dressing in detail, as it will be shown in the regular course, and I think quite probably in the clinic, too, before the winter is over. I will only say I have never seen any good of the axillary pad, and as it is very uncomfortable it may well be dispensed with. Again, never try to crowd down the salient point or projecting end, usually the sternal end, by putting a compress over it to press it down; this only hides it; when the compress comes off you will find it there still. It can only be satisfactorily reduced by bringing the arm into proper position, and keeping it there.

Case 4. Miss E. T., æt. 19; born in the United States. Six years ago this patient was afflicted with toothache of an agonizing character, connected with caries of the first superior molar tooth of the left side. In the course of the trouble there was great swelling of the cheek, which was poul-

ticed; an abscess pointed externally on the cheek, which was opened by incision; a considerable quantity of pus escaped, after which the pain, swelling, etc., subsided, and soon after the offending tooth was extracted. It was badly decayed—patient does not remember whether there was a bag of matter attached to the root or not, but I think, probably not.

In a short time the opening healed up, but left a very considerable scar, the deformity from which is seriously increased from the fact that it is bound down to the bone beneath, having dragged the superficial tissues down by the absorption of the fat and areolar tissue in such a way as to form a large, deep, and ugly pit or depression. This is a very serious affliction and deformity, especially when, as in the present instance, the patient is otherwise unusually prepossessing in appearance. Here you see this disfiguring cicatrix, situated over the edge of the molar bone at its junction with the superior maxillary bone, forming a deep cup-shaped cavity, nearly half an inch in depth, and giving to one-half of a sweet and pretty face almost a forbidding appearance.

This is the result of an alveolar abscess, a disease which you certainly ought to understand, since it is capable of giving rise to such disagreeable results as you see before you. I shall feel all the more at liberty to occupy your time with this affection, because it is generally ill understood by the physician, who is only too glad to turn over its management to the dentist, who, unfortunately, sometimes knows as little as he, and what is a simple and manageable affair is thus allowed to do a great deal of harm. Alveolar abscess may make its appearance simply as a sac of matter attached to the fang of a tooth after extraction, when people commonly say the tooth was ulcerated (a strange misuse of terms), or else as a gum-boil, or else as an abscess opening through the cheek or at some other situation quite remote from the tooth, which is the cause of all the trouble.

It begins as an inflammation about the fang, or possibly sometimes fangs, of a decayed or dead tooth. First fibrous or plastic material is thrown out around the fang, the bony wall absorbed by pressure and inflammation, and thus a cavity of greater or less size formed in the alveolus. Suppuration now occurs in this deposit of lymph, the external portions of which form the cyst already referred to at the root of the tooth. If the tooth be not extracted it may find an exit by the side of the tooth and discharge by a sort of dental fistula, which may heal up and the trouble pass over for the time with the danger of being renewed from time to time, or it may not; but the matter, after the first discharge, becomes thin and serous or glairy, and continues to be discharged indefinitely. Again, finding its way through the bony wall, it appears on the outside as a gum-boil, and either opens, discharges, and heals up, or remains fistulous till the tooth is drawn. But worse events than these may follow. When an upper molar is affected, and particularly in cases where the commissure formed by the passing over of the mucus membrane from the gums to the cheek come down lower than usual, the inflammation extends to the cheek, the tissues of which become absorbed before the advancing abscess, until at last they are excessively thinned, red, and shining, and the abscess is either opened or opens spontaneously upon the outside. This opening may remain patent, or either with or without the removal of the tooth, generally only in the former case, heal up. If the opening remain it is surrounded by elevated, sometimes very prominent, smooth granulations, and the case is not infrequently mistaken for one of necrosis of the jaw. If it heals up it does so with a depressed, adherent, and sadly disfiguring scar. Now, the cause of all these different phenomena is the presence of the dead tooth, and the cure is the removal of the tooth. Generally, when attention has once been called to it, and a knowledge of its pathology acquired, discrimination of the

disease is not difficult. Sometimes, however, there is more or less difficulty. The offending tooth may be a mere root or fang, very much hidden or entirely covered by the gum which has grown over it, or it may have become detached and slipped into the cavity hollowed out in the alveolus, where it is lying loose. Knowledge of these possibilities is all that is needed for their detection. Occasionally obscurity arises from the distance of the abscess from the offending tooth, as, for instance, in the lower jaw it may appear under the chin, or behind the angle of the jaw near the external ear, or, in the posterior molars of the upper jaw, it may be far back on the roof of the mouth, giving rise to suspicions of necrosis of the palate bones. Here, again, to be forewarned is to be forearmed. As a rule of treatment, when an alveolar abscess threatens, the tooth should be removed. But sometimes, from a variety of reasons, this may be very undesirable. We may often, under these circumstances, prevent the formation of matter and cut short the inflammation by the application of a leech, or even two, upon the gum over the root of the offending tooth. I have many times succeeded in this way. If matter, however, is formed, it should be evacuated early by an incision on the inside of the mouth over the most prominent part of the swelling. No harm, but sometimes great good, is done by this incision, even if no matter be found.

Every effort, of course, must be made to prevent the abscess from opening externally, and this is best done by early incision; but, even if the abscess points distinctly to the cheek, it may, sometimes, be prevented from opening there, by making a vertical incision through the commissure or fold of mucus membrane, thus bisecting it, as it were.

And, though the abscess has already opened upon the cheek, the mischief may be very materially limited by the internal incision.

In these cases, poultices and fomentations should not be

applied to the face. They hasten the approach of matter in this direction; they weaken and devitalize the tissues, lead to more extensive absorption, and, in every way, tend to aggravate the patient's condition, and insure his deformity.

I have dwelt thus, at some length, on this simple subject of alveolar abscess, but, I need no better excuse for it than the case before us, which shows, plainly enough, that the subject is far from being generally well understood.

Now, to the question immediately before us—can we do anything for this young lady's deformity?

Yes, I think we can. We cannot remove it entirely, but we can lessen it very much, indeed.

First, I will, by an internal incision, dissect the scar entirely loose from the bone to which it is adherent, and loosen the tissues, subcutaneously, for a little distance all around; and, then, to prevent the readhesion of the tissues, have them moved about every day, until healing is complete, and the danger is past. Then, after the lapse of a few months, I will remove the scar, which is irregular and rather broad, by including it between two curved incisions, bring the edges of the little wound together with very fine suture, and thus leave a small linear, superficial cicatrix, in place of this deep, ugly, puckered scar. The first part of this procedure, we now proceed to put in execution. I take this small scalpel, and, holding it flatwise, push it up through the commissure of the cheek, until I come to the scar, and then endeavor, by lateral movements of the knife, to separate it from the bone. This, I find to be rather a troublesome proceeding. I have to exercise the extremest care, lest I penetrate the cheek. The scar is so thin, it is so closely adherent to the bone, sending down processes into numerous little depressions, that I am in the greatest danger of button-holing the cheek, and shall esteem myself fortunate, if I escape doing so. But, at last, notwithstanding the thinness of tissue, which permitted me almost to see the knife-blade

underneath, I have safely accomplished the task; and, now, you see, everything is loose and free.

No doubt this cheek will be pretty sore for a time, but notwithstanding this, the soft parts must be freely moved over the bone beneath every day, lest re-adhesion occur.

This case succeeded perfectly well'; the surface of the cheek was permanently raised to its proper level, and after a few months the scar was removed in the manner proposed, with very great and satisfactory improvement to the young lady's appearance, and she was immensely pleased with the result.

Since this case occurred, I notice that Mr. Wm. Adams, of London, has proposed a new procedure for dealing with these depressed and adherent scars. His plan is as follows: After the scar has been loosened from the bone, one or two hare-lip pins are to be carried across and deeply underneath it, so as to lift it up to the surface; so that instead of being depressed it will be made actually prominent, or pouting, from the surface. Loosely wound with yarn they are left in place for twenty-four or forty-eight hours, until sufficient exudation takes place beneath to maintain the level of the cheek. Of course the subsequent excision of the cicatrix may be done just the same as in my case, if desirable.

This plan seems a very promising one, and I shall give it a trial on the first opportunity; it will save some pain and trouble, but it cannot possibly give any better result than was attained in the case just related.

[To be continued.]

ART. VI.—*Exophthalmic Goitre.* A clinical lecture delivered at Starling Medical College, Columbus, Ohio, November 7, 1877. By STARLING LOVING, M.D., Professor of Theory and Practice of Medicine.

GENTLEMEN: This patient's name is Maria M.; she is twenty-seven years of age; unmarried; and by occupation a seamstress. She is of medium height, rather slender, and

does not appear to be very strong. She has sandy hair, fair skin, which, over the face and neck, is flushed; irregular features, blue eyes, which are very prominent, or more properly protrude from the orbits, and seem to have less freedom of movement than is natural. You will notice that the lips and gums, and the edges of the eyelids as well, have a bright color; positive evidence that there is not anæmia in this case.

The patient trembles, probably in part from her presence in an unaccustomed place, but not altogether from this, for the same symptom has been observed by me when she has consulted me at my office, when there was nothing to disturb her. Her respiration is much hurried, but not otherwise embarrassed; she has no cough, and no pain in her chest.

Her neck is thicker than it should be in a person of her proportions, particularly below and at the sides; its taper from below upward is more abrupt than normal. The tissues of the inferior part of the neck appear swollen, or rather hypertrophied, and, as already remarked, the skin is flushed or hyperæmic, and the whole neck is flattened from before backward. You will observe that the thyroid body, or glands, is enlarged to several times its normal bulk, and that the enlargement is not symmetrical, being greatest on the right side.

This is generally the case when this body is enlarged from any cause, unless by acute inflammation, as is supposed from the fact that the right lobe is most plentifully supplied with blood from larger size of the vessels. There is strong pulsation in this swelling, quite perceptible, I presume, to those at a distance. There is also to be observed, particularly when I bend the patient's neck a little backward and turn it to one side, throbbing pulsation over the track of the carotid artery, which appears from the touch to be enlarged throughout its whole length as far as it is superficial. This is as strong, as you can see, on one side as on the other. My

fingers are distinctly moved by it. Pressure on the thyroid body gives no pain. The body is quite compressible, and elastic. With each pulsation of the heart, a thrill very decided in character is conveyed from the tumor to the hand.

The patient informs me that her eyes, notwithstanding their great protrusion, give her no pain, and that her vision is not interfered with, except that she thinks she is a little near-sighted, and now and then is somewhat annoyed by black spots floating up and down a little in front. Such spots are observed in various affections, and are called *muscæ volitantes.* They frequently disappear altogether to return again when there is excitement or fatigue. This symptom has little significance in this case.

The conjunctivæ are hyperæmic, but there is no evidence of inflammation, notwithstanding the fact that the lids can scarcely be made to cover the globes. This is a somewhat characteristic condition, for in other diseases when the conjunctivæ are exposed, as you see here, inflammation is speedily set up.

Although the respiration is hurried there is no evidence of disease of the lungs. Percussion and auscultation are normal.

The impulse of the heart is much stronger than is natural or healthy. You can see that it is conveyed to my hand. The sounds of the heart appear to be normal, but its rhythm is changed. The contractions appear to have unequal force. With every tenth or twelfth beat there is an intermission, and simultaneously the irregularity of the contraction is increased. This is so marked as to convey the idea of some animal struggling to escape from a closed sac.

I have observed this peculiar irregularity in another case, in which there was disease of the valves including the tricuspid. Percussion proves that the area of the heart's dullness is increased.

I infer that the heart is hypertrophied, and venture to

express the opinion that there is something wrong with the tricuspid valve, though there is nothing except the alteration of the rhythm of the heart, to support such an opinion.

The pulse at the wrist is strong, full, bounding, and very frequent. It is forty beats to the quarter of a minute. This is exceedingly rapid. Perhaps this is due in part to mental excitement, but not wholly, for I have never found it below one hundred and twenty to the minute since the patient has been under my observation. Frequent pulse is one of the distinctive symptoms of the disease before us, and makes its appearance first of all the symptoms. It is not uncommon to find the pulse ranging from one hundred and twenty to one hundred and sixty to the minute, even before any change can be detected in the eyes or the thyroid gland.

The skin is moist, and not above the normal temperature.

The patient has moderately good appetite and fair digestion, though she is subject to habitual constipation. There is appreciable edenea of the feet and legs, probably due to the state of the circulation. The remaining functions are normal, except that of menstruation which has been wholly suspended, without pain or other evidence of disease of the uterus or its appendages, for three months. Amenorrhœa is a common feature of this disease. It is found to exist in more than half the cases.

The patient sleeps well, though she sometimes has dreams unpleasant in character.

Her history is that until rather more than eighteen months ago she had ordinary health, having never had any disease more severe than a sharp attack of remittent fever. She has had occasional attacks of ague, once or twice within ten years. She has had amenorrhœa, menstruation ceasing without apparent cause, and returning after two or three months with no more than what is called domestic treatment; the use of "home remedies" of which we hear so much, and which usually means the use of the infusion of some aromatic stimulant, as pennyroyal or yarrow, etc.

She is poor and obliged to work constantly; her occupation forbids exercise and amusement, and predisposes to uterine disorders, and to constipation of the bowels; so it is not surprising that she should have suffered in this way, without other cause for amenorrhoea, and no other cause appears to have existed for those earlier interruptions of the function. Once or twice she has had what she supposed to be slight rheumatic pains, but she has never suffered from a decided attack of rheumatism.

I have not been able to trace any hereditary tendency in any direction, her parents, brothers, and sisters having enjoyed immunity from constitutional diseases. No member of her family has suffered as she is suffering. Eighteen months ago she began to have palpitation of the heart. Palpitation of the heart means morbid increase in the contractions of that organ, with, as a consequence, more decided and sharper impulse. She thinks the action of the heart has never since been normal. At first the disturbance was not sufficient to cause annoyance, but it has constantly increased, and now, even when she is feeling best, it gives discomfort. Sometimes it is so great as to occasion much distress, and to impede her respiration. At this moment her breathing is embarrassed from overaction of the heart. One year ago, she noticed for the first time that the thyroid gland was enlarged. The enlargement commenced on the right side; very soon it became apparent that the left lobe was also swollen, and the whole gland has continued to grow to the present time. It has materially increased in bulk since last summer, when I first saw the patient.

I do not suppose it will go much beyond its present status, as there is not very great hypertrophy, usually, in cases of this kind. There are, however, exceptions. I remember one which came under my observation some years ago, in which the gland was as large as common in ordinary goitre or bronchocele.

With the enlargement of the thyroid gland, the tissues of the neck became gradually hypertrophied to their present condition.

The patient thinks the change in her eyes began simultaneously with the enlargement of the gland. It was scarcely perceptible at first, but is now so great that the lids cannot be made to close perfectly over the globes.

The throbbing of the carotids has increased with the other symptoms; not perceptible at first to bystanders, it has become the fourth most prominent symptom.

The patient suffers frequently from a feeling of fullness of the head, and sometimes from headache, which, however, is not severe. She also complains that she has occasionally a sensation of ringing and hissing noises in her ears.

What is the disease? It is a case of exophthalmic goitre, Graves's or Basedow's disease, a malady described nearly at the same time in England by Dr. Graves, and in Germany by Dr. Basedow, and sometimes called after one and again after the other of these gentlemen. More commonly it is known as exophthalmic goitre, from its most striking features, the protrusion of the eyes and the enlargement of the thyroid gland. This is the best name, because it expresses more than the others.

This, you will admit, is a peculiar ailment. It is a puzzling one as well. Much investigation has been made with a view of ascertaining its etiology and pathology, but so far with only meagre results. Very little is accurately known with regard to either. It has been asserted that it is sometimes connected with structural disease of the heart, and this may be true of the case before you; but it is seldom that we observe any of the symptoms which characterize this malady in connection with those of the more common diseases of the heart; and the hearts of persons who have died while suffering from exophthalmic goitre, unless hypertrophied, have seldom been found morbid.

Morbid enlargement of the thyroid gland is frequently observed in connection with hyperæmic and inflammatory conditions of the uterus and ovaries, but we find amenorrhœa associated with this disease more frequently than any other uterine disorder, almost always apparently as a consequence, not as a cause, the menses ceasing after the characteristic symptoms have been some time in existence. None of the other organs appear to have any part in the etiology, as they are found healthy after death, or, if diseased, the change is secondary or has a different pathological significance.

It seems to be an idiopathic malady having its origin in an obscure change in the innervation of the organs involved. It is supposed that this change involves in the main that portion of the sympathetic system which supplies the heart and the blood-vessels springing from it. This opinion is based on the fact that unnatural conditions have been found in the main trunk of the sympathetic nerve, in its cervical portion, in persons who have died while suffering from the disease.

It is supposed to be paralysis, because the effect is somewhat the same as is observed from loss of power in the vasomotor nerves in other parts of the body, and because of the absence of all change which might be attributed to inflammation or to one of the several forms of degeneration.

Increased frequency of the action of the heart is the first, and with the remarkable thrill pervading the arterial system, especially in the upper portion of the body, which accompanies it, continues to be the most remarkable symptom throughout. As we have seen, it originates without perceptible antecedent change in the structure of the organ, and we are obliged to suppose that the mischief lies in the nerves which control its motions. Increased action is what occurs when these nerves are severely injured or divided. This is especially noticeable when the cardiac portion of the pneumo-gastric is cut, but it is also observed when injury

is done to the cardiac plexus. Because the action of the heart is disordered when the inhibitory nerves are divided and connection with the nerve centers is severed, from the similarity of the symptoms, it may be supposed that loss of function or paralysis occurs in this disease through morbid change in the same nerves.

The increased frequency of the action of the heart, and the hypertrophy of that organ, found in occasional cases, is thought to be in compensation for loss of strength.

The paralysis cannot involve the entire nerve supply of the heart; else, we should naturally think, the disease would prove uniformly and immediately fatal.

The dilatation of the blood-vessels, the enlargement of the gland, together with the protrusion of the eyes, may depend upon the extension of the morbid change in the nerves, or merely upon the increased quantity, and the rapidity with which the blood is impelled through and into the parts. In some cases it would appear to be the latter only, for by pressure the swelling of the gland and the protrusion of the eyes may be quickly and almost completely reduced for the moment. In occasional cases, after death, the eyes return to their normal position, and no change of structure is discovered in the orbits, even when there has been much distortion, but much more frequently abnormal growth of connective tissue and adipose tissue is found in the orbits and in the gland. This is what occurs in spurious hypertrophy, an ailment thought to arise from disease of the nerves of the parts affected.

Judging from the appearance of this woman's neck, I should say there is more than mere hyperæmia. The vessels are enlarged in calibre, and their walls are thickened. There seems also to be hypertrophy of the tissues immediately surrounding the vessels. I suspect if we could make the proper examination, we should find the connective, and, to some extent, adipose tissues increased in the parts involved. The

muscles are apparently normal. The abnormal changes are not always so regular as you observe them to be in this case. Sometimes the sole symptom is the unnatural action of the heart with a hyperæmic condition of the neck. Again there will, in addition, be protrusion of the eyes without swelling of the gland, and now and then swelling of the gland without distortion of the eyes. Most frequently when there is irregularity, the change is marked in the heart and eyes, while the gland remains nearly normal. Degrees of severity are also noticed. Now and then, with the disturbed action of the heart, there is just enough deformity to enable the acute diagnostician to recognize his case.

In other cases the change is so great as to give the patient a hideous appearance; a most ferocious expression, particularly if the subject is a male, the effect being heightened by the more strongly marked features and the beard.

The greater number of persons who suffer from this disease are females, generally unmarried, between the ages of twenty-five and forty years, and the class to which our patient belongs, seamstresses, seem peculiarly liable to its attacks. It has been observed in married women. I once saw a marked case in a woman (she had the most hideous face I ever beheld), who was the mother of several children, and who, curiously enough, afterward became insane.

It sometimes affects young girls, but not, so far as I know, women who have ceased to menstruate. It is not common among men.

I may say that so far as my experience extends, the subjects of the disease are irritable, crotchety, and disposed to melancholy, but I never heard of but the one who became insane. The amatory passion is inordinately developed in occasional cases.

The larger number of patients who have applied to me for this disease, have had the nervous or nervo-sanguine tem-

perament, well-marked; some have had the bilious temperament.

The most common complication is anemia, which is present in greater or less degree in the majority of cases, but not in all. Our patient, as we have already observed, is certainly not anemic, at least not appreciably so. Sometimes there is cirrhosis of the liver, or sometimes inflammation or simple hypertrophy, and occasionally the spleen is inflamed, enlarged, or softened. Catarrh of the stomach is now and then a complication, but none of these are constant, and do not appear to have any direct connection with the original malady, unless such as may be supposed to arrive from the disordered circulation.

As said a few moments ago, anemia is the most constant complication, and it is difficult not to believe that there is some direct connection between the changed function of the heart and the state of the blood.

The disease is usually chronic in its progress, slowly developed and continuing months, more commonly for years. But occasionally it is acute and runs a short course. It does not seem, in the chronic form, to tend toward a fatal issue. I do not remember a recorded case in which it of itself proved fatal. But its subjects do not live to old age, they generally die early of some intercurrent trouble, most commonly of pneumonia, to which affection they seem, as one should suppose, peculiarly liable. Hepatitis and cirrhosis are sometimes the causes of death. Any acute disease seems to acquire increased gravity.

Various plans of treatment have been adapted from time to time, none with entirely satisfactory results. The indications seem to be the control of the action of the heart, and at the same time to improve the strength of the organ by influence upon its nerves, or through the blood and general system. Some entertain a different idea and prescribe alterative medicines, inferring, I suppose, the disease to be of in-

flammatory origin. Trousseau recommends iodine, and states that he obtained benefit from it; others have not had good results from its effects. I prescribed it in medium doses in one case, with the effect of making my patient weak, producing increased frequency of the action of the heart, and menorrhagia. I have not prescribed it since.

The various medicines containing the elements of hydrocyanic acid, and the dilute acid in proper form, are recommended by the authorities as beneficial, and possibly they are so, but their action seems to me to be contrary to that most desirable under the circumstances. They all depress instead of strengthening the action of the heart. Besides, they are with the exception of the oil of bitter almonds, and the cyanide of potassium, variable in strength and therefore uncertain in effect. All are dangerous as poisons.

Belladonna controls and strengthens the heart, and is a suitable medicine. I have not been satisfied with it, but you will have ample opportunity to test it for yourselves. It is efficient when given by the stomach, but more so when administered hypodermically. Atropine should be used in preference to the other preparations, and I need only remind you that it is a powerful drug.

Digitalis is held in most estimation by the majority of practitioners in this as in most other diseases in which the action of the heart needs control. It is well known that it strengthens the heart, while it renders its action more equable and slower. To produce this effect it must be given in sufficient doses, and continued until the desired result is attained. The alkaloid digitalin is the most reliable preparation; but the tincture is very good, and neither so costly, nor dangerous in careless hands.

Ergot of rye, from its effect in causing tonic contraction of non-striated muscular fibre, of which there is abundance in the heart and blood-vessels, might be of service. It is, as you know, used to control hemorrhages and passive hyperæmia

and its consequences, including many forms of nervous disease.

The nitrate of amyl has been used, it is said, with the effect of lessening the subjective symptoms, but with no material benefit.

When there is anemia, as is often the case, the preparations of iron may be used with the hope of repairing the blood. Perhaps as good a combination as we can prescribe is the tincture of digitalis, with a preparation of iron.

Too often you will be utterly disappointed in the results of treatment. Not many cases have been reported. While I would advise against hyper-medication, I think you should not fold your hands and declare yourselves without resource. Perhaps some one of you may discover the nature of the disease, and the appropriate remedy. I am obliged, gentlemen, for your patience and attention.

TRANSLATIONS.

ART. VII.—*Notes on two cases of Hydrophobia.* By DOCTORS JOSIAS and CONSTANTIN PAUL. Translated from the French by BARNARD ELLIS, M.D., Alumnus of the College of Physicians and Surgeons, New York.

CASE I.—*Hydrophobia produced by the bite of a mad dog. Remarkable effects of chloral upon convulsions, and of oxygen upon asphyxia.*

One of the guardians of the forest of Vincennes, named Walbert, aged fifty years, made his rounds the 3d of September, 1875, toward six o'clock A.M., and seeing a hound dog, who acted strangely, and was wandering about without a master, he called him several times, without success.

This dog soon met Walbert's dog, whom he immediately attacked, throwing him down and rolling him over. Walbert

sprang and seized the strange dog by the collar, but the dog bit him on the right hand and wrist. With great trouble he was able to master the dog, tie him with a cord, and lead him to his master. On the way he stopped at the house of a comrade, where he washed the wound with vinegar, and cauterized it with ammonia.

The dog was first taken to the house of his master, then, by orders of the Commissary of Police, he was sent to the Veterinary Hospital, at Alfort, where he was declared mad, and where he died two days afterward.

Let us note, in passing, that they noticed a cicatrice on the lip of the mad dog, caused by a bite given probably several days before; and that he had gotten loose by breaking the cord he had been fastened with, and had bitten three other dogs before Walbert secured him.

Walbert, after having so slightly cauterized himself, thought it prudent to come to my office, where I cauterized the wounds with the solution of nitrate of mercury. Unhappily, the poison had had time to become absorbed, and this late cauterization was without effect.

An examination showed one wound on the back of the hand, at about the separation of the metacarpal bones of the thumb and forefinger, and another on the face of the wrist, over the inferior extremity of the cubitus.

Walbert was an old and brave soldier; had been at the assault of Rome, and afterward at Sevastopol. He accepted his situation philosophically, knowing well its gravity, and said no more about it.

Twenty-six days after inoculation, the 9th of October, he experienced some phenomena, of which he did not understand the importance, but which indicated the invasion of the disease. On that day he had been sent to look for some young swans, in the lake, and he was surprised to find that he had difficulty in carrying a burden, which to him had never seemed heavy before. After finishing his task he

found his arm painful, a pain beginning at the wound, at the wrist, and soon extending to the shoulder.

During the night and the following day this pain augmented in intensity. He took it for a rheumatic affection, and wrapped the arm in flannel. On the morning of the 12th of October, two and one-half days after the invasion of this pain, he had lost his appetite, and feeling ill at ease, sent for me. However well I might know the antecedents of the patient, and however uneasy I might have been about his fate, I yet took no alarm, the patient being subject to these pains, and the weight he had carried explaining its localization. I prescribed an emetic, and promised to return in the course of the day.

The patient took the emetic and the ordinary dose of warm water, without showing any particular signs, and vomited abundantly. In the afternoon, just three days after the invasion of the prodromic period, he was taken suddenly, in drinking, with a spasm, in the region of the muscles of deglutition, and this phenomenon was reproduced several times. The disease had come, therefore, to take a significant character. I recognized hydrophobia. The extreme gravity of the disease, and the impotency of therapeutics, made me desire the assistance of a confrere, and I begged Dr. Constantin Paul, of the Hospital Saint Antoine, to aid me.

On the morning of the 13th of October we saw the patient together; we found him without fever; the skin normal in temperature, the pulse-beats sixty per minute. The patient was calm. He was a man of great energy and of great coolness.

We took again, in detail, the history of the prodromic period, and the patient repeated to us the details already recorded.

Walbert complained of the greatest difficulty in drinking; he was taken immediately with convulsive spasms; but, as he is very energetic and has great control over himself, he

managed, with extreme difficulty, to drink two cups of beef-tea.

Not only the sight of liquids gave him spasms, but the simple fact of speaking of drinking, brought on these fits. He was then taken with a convulsion of the pharyngeal muscles, and which is extended to those of the neck, which raise the shoulders, as is sometimes seen in asthmatic attacks. These spasms last some instants, and then disappear. The tongue is thick and the edges slightly indented by the teeth; the tongue rested in a bed of sordes. The most careful examination of the floor of the mouth, and of the under surface of the tongue, discovered no traces of those vesico-pustules, which have been called *lysses.* At the same time, it would have been more easily seen than ever, as the patient had a ranula, and the floor of the mouth was lifted up and propped by a cyst. There was nothing either in the throat. There was neither spirtation nor sputtering. The lips were dry and showed no traces of salivary or bronchial froth. The respiration was free, though the patient felt a sensation of pain behind the sternum.

Walbert was calm, though he knew his state, and so conscious of it that he told his wife the evening before of his situation, and made known to her his last wishes. His senses are as calm as his mind. There were no hypersesthesia of any kind; the skin recognized any contact, and perceived the pain of pinching, but only in a normal manner.

Treatment.—In view of the failure of all the means which had been employed against hydrophobia heretofore, we confined ourselves to the filling of the three following indications: 1st, to sustain the forces of the patient; 2d, to suppress the occasional causes which bring convulsions; 3d, to exercise powerful sedation upon the nervous system.

Since, in the case of our patient, it was the action of drinking which determined the spasms, we chose a small coffee-pot for him to drink from, so that when we offered him

drink, he could neither see nor smell it, and we enveloped the pot with black merino, so as not to excite him with its brilliancy. The room was darkened, and silence observed near the patient. When we tried to make Walbert drink from this vessel, which we called the *marmite du diable* (the devil's saucepan), he felt slight spasm of the pharynx, but we made him take notice that he did not know what was in the vessel, and perhaps that it contained nothing at all. Whatever may have been the influence of this thought the patient carried the vessel to his lips and drank, at long draughts, a large cup of beef-tea, which it contained. Later on he continued to drink in the same manner. We prescribed, besides, soup with an egg poached in it, and water with a little wine in it. Finally, we had an enema, which we had brought with us, given to him. This consisted of seventy-seven grains hydrate of chloral, and five drops of laudanum, in nine ounces of water. Half an hour afterward the patient experienced an exquisite calm, and said he felt cured. We got him to take his soup in a porringer, with a wooden spoon. He ate with pleasure, drank a little wine and water, then fell asleep and slept two hours. When we returned, at five o'clock P.M., we found the patient calm, and in a state of ease and comfort unlooked for. The action of the chloral had been rapid; the pulse was slightly accelerated, but the skin cool. The sensibility of the skin is blunted, but is preserved intact at the hands. It has disappeared at the inferior members, and when pinched he does not perceive it.

There has been no fit since the injection of chloral, which was followed by a second one of the same kind. They gave, besides, a third, and we prescribed a fourth for the night. Finally, in case asphyxia supervened, we ordered an India-rubber bag, containing six gallons of oxygen, furnished with an inhalation tube, placed by his bed, as also nitrate of amyle in case of coma supervening.

The night was passed well, Walbert sleeping two hours, and when we returned in the morning we found him in a most satisfactory state. He no longer has convulsions, only a little hesitation when he commences to drink. Such was the satisfactory state of our patient; unhappily, it was not to last. On Friday, the third day of the convulsive period, Walbert was found to be in good condition in the morning, after a sleepless night, it is true, but calm. He had had no convulsive phenomena for the last forty-two hours, except an itching and excitation of the penis, followed by an ejaculation, and which excitation had produced the same twice the evening before. He drank again from the coffee-pot, but after drinking, was taken suddenly with an attack of asphyxia, with extreme dyspnœa; the integuments became violet colored, and he threw off a bronchial mucus, bloody and frothy, escaping in a continuous manner by a sort of slow and involuntary expression. The respiration was diaphragmatic, but jerky and insufficient. They immediately injected the six gallons of oxygen, little by little, into his mouth. We arrived at half-past seven o'clock, three-quarters of an hour after the beginning of this attack, and as he appeared to be in agony, we gave him a little nitrate of amyle. At this moment the patient was in such a state of asphyxia that we believed him on the point of dying. Nevertheless, he was taken in a few instants afterward with a desire to vomit. He made considerable efforts and brought up a large quantity of liquid food, at the same time rejecting an enormous quantity of bronchial mucus. The patient soon came out of the comatose state, recovered his respiration, and seemed not to feel any more asphyxia. He spoke, asked to see us again, and begged his comrades to call his superior officer, the head guardian of the forest, who came quickly. Walbert received him with pleasure. He said he knew he had hydrophobia, and that it was a mortal disease, and begged the chief to take care of his wife and children. This was said calmly by a man who knew no fear.

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We returned a short time afterward, and finished by giving a new injection of chloral. The patient had escaped asphyxia, thanks to the oxygen, and we again had a little hope for him. Unhappily, toward four o'clock he sank suddenly, and was carried off by syncope, after three days of the convulsive period.

Thus far, passing rapidly over several details, we have only described the progress of the disease. Let us now take up these details, one by one, so as to give to this case all the interest it may offer.

In the first place, the question is evidently one of real rage—debut, incubation, prodroma, hydrophobia, asphyxia, etc., and it is so true, that we need not justify our diagnosis, nor search for analogous cases that may be more or less extraordinary. We have to do here with a case of rage so clear, that the description of it is, so to speak, classic.

First of all, we recall attention to the fact that the dog which bit Walbert on the hand and wrist was really mad, the proof of it having been ascertained by the professor at Alfort, and we could not offer to you more competent testimony. As to the incubation, it was thirty-six days from the moment of the bite to the beginning of the invasion of the prodromic period, or thirty-nine days to the appearance of the first fit of hydrophobia and convulsions. This duration of incubation is short, because the average established by Doctors Bronardel et Bouley (*Dictionnaire Encyclopidique*, æt. "Rage"), for bites of the superior numbers of men between forty and sixty years, is seventy-four days, while it is but forty-five days in cases of bites of the face, and forty-two days where the inferior members are bitten.

If, in place of considering the seat of the wound, we regard the age of the patient, we find that the average period of incubation at that age is sixty-five days, while in the case of subjects under twenty years, it is shorter, or fifty-seven days.

The invasion of the disease was classic. It commenced

by a pain in the cicatrice, at the wrist, which mounted to the shoulder. The patient had, besides, malaise and extreme lassitude, indicating the invasion of the acute disease. We miss, in this description, only the ordinary melancholy of the patient, which generally shows itself at this moment, and ofttimes sooner, during the period of incubation. This is escaped ordinarily only through ignorance of danger. But this was not the case with Walbert. He understood the "rage," since he was particularly charged to arrest all suspected dogs. He knew that the one which had so cruelly bitten him was really mad; but he lived in a stoical calm, which he did not belie for an instant, and which was the admiration of his comrades, and which also struck us, as well as our confreres who had come to see the case and assist with their counsel, and all retired, deploring the misfortune to a man so courageous, and a soldier so brave.

All we desire to say of the period of invasion is, that its duration was three days and presented no trace of "lyssa," or of vesico-pustule at the orifices of the sub-maxillary, or sub-lingual glands.

The period of excitability was marked by violent hydrophobic convulsons, and characteristic also for those who had never seen them before, nor was there any hesitation about the diagnosis, either with the physicians, or with the guardians of the forest present, who had already watched with their comrades in like situations.

It must be noted that these convulsions were confined to the muscles of deglutition, and to those of the neck, and did not at first extend further, and that it was only at the end of two days that they reached the vesiculæ seminales, and at the end of two and one-half days the respiratory muscles.

During these convulsions, brought on not only by the sight of drink, but at the mere idea of drinking, the nervous system, the same as before the administration of chloral, was in a state of relative calm, the senses had suffered no

hyperaesthesia, and the skin retained its normal sensibility, particularly not showing any painful impression from the contact with cold air, an impression so marked in the case following this. It is true that we hastened at first to protect the patient from all occasional causes of excitation, with the greatest care.

We have said previously that the patient had extreme lassitude, and the tongue was covered with sordes, in the prodromic period; and that was all that denoted the acute stage of the disease, as we find no fever, properly speaking, and the slight variations of the temperature were insignificant.

Let us note again the pollutions which took place at the end of the second day of the convulsive period, which were preceded by a vivid sense of excitement in the sexual organs, but apparently without any appreciable duration of the erection.

During these first two days he had no expectoration, the secretions of the mouth were normal, and not until later, at the moment of the asphyxia, was there seen any slaver.

In reality, it was at the middle of the third day of the convulsive period that the patient, taken suddenly with convulsions of the respiratory muscles, and particularly of the thoracic muscles, ejected a large quantity of bronchial froth, which seemed to be expelled by a sort of continuous pressure by a true contraction of the respiratory muscles. It escaped little by little as from an inverted vessel, the very energetic action of the diaphragm not appearing to hasten its escape. A sort of pharyngeal and guttural roll, nevertheless, proved that this froth was agitated. This fact struck us, because it recalled to us an observation of Dr. Féréol, in which the eminent physician of the Maison de Sanité had noticed that the froth was bronchial, and not salivary. In this respect our case was analogous to his.

Would this bronchial froth be inoculable? The fact is

possible, but we had no animal to inoculate at the time, and we know that to obtain a positive result, heretofore exceptional, we must operate immediately, before the liquid has time to cool.

However that may be, let us retain the fact that we observed no salivary mucus, but only the bronchial froth, or aerated mucus, which fills the air-passages in all cases of suffocation.

We note besides, the fact, so astonishing, that the patient was able to survive the agony produced by the asphyxia, and we ought evidently to attribute the fact to the oxygen, though the awakening from this state had been without doubt excited by the nitrate of amyl, the action of which upon the brain is, as we know, immediate.

Finally, we signalize the sudden death—death by syncope—of a man whose nervous system appeared to have exhausted all its force in six days, after the economy had taken thirty-six days to arrive at this terrible nervous tension; who fell in a moment.

We beg you to excuse the length of this paper, but it seemed necessary to be precise as to facts which the physician so rarely sees himself, and of which he has, so to speak, no experience; and we ask you to return an instant to the history of the brave Walbert. If he was hydrophobic, we would have been able to say that he was not enraged, because at no moment did he have a period of furious excitement. Quite the contrary, it was fully recognized by all those who nursed him, and they witnessed it at each moment. If, for a moment excited by the pollutions and intoxicated by the chloral, he did ask that his wife come and partake of his bed, he was quickly brought to reason, and a few words from his nurses sufficed to make him abandon his demand immediately.

What was striking, on the contrary, in the history of Walbert, was the courage and manly energy of his charac-

ter. He remained master of himself in spite of the excitation produced by the disease, and the conviction of a near and inevitable death. Also, he said to us: "Spare nothing to cure me. I am ready to submit to the most painful agonies. Dissect me if it is necessary, but I want to be cured."

What have we done for him? Very little, in reality, since we were not able to save him; perhaps much, if we put what we gained to the better acquaintance of the disease.

We have said that our first care was to suppress every thing which could excite the senses and bring on convulsions. Nothing that was shining or glistening or fluttering, and no noise or confusion, was allowed near him, nor was he surrounded by any but those who tended him.

But the action of the chloral has been the most remarkable. In half an hour after the first injection of 77 grains chloral and 5 drops laudanum the sedative effects were established. The precordial anxiety had disappeared; the hydrophobic convulsions had ceased almost entirely; the patient was able to eat some soup, drink some beef tea, and to sleep two hours during the day, and the same time during the night. At the end of twenty-four hours' treatment we had given the patient 385 grains chloral and 25 drops laudanum. He had not experienced the action that is said to be the physiological one of this medication, but he had a little coolness of the skin and a slight acceleration of the pulse. The second day was like the first, except that as the pulse had fallen to 52 at one time, only 77 grains chloral were given, so as to let the pulse recover itself quickly.

Well, under the influence of this treatment, we were able to guard our patient for twenty-four hours against an attack; he had been able to sleep by snatches, he had been fed, his food had been digested, as the stools proved; and we had, during this time, the illusion that he might be cured.

The energy of the patient, the real influence of the treat-

ment, the exact execution of our orders, the supplying of the oxygen when asphyxia supervened, all permitted us to hope we were to see that for the first time a case of true hydrophobia had been cured. Without regard to the future, we say that this result alone ought to encourage us not to despair of curing hydrophobia, and when we came back to see the case, with Dr. de Remse, who had accompanied us, we experienced, in common, that joy which the physician feels when he has hope that his patient has escaped a mortal danger.

Unhappily, this hope was of but short duration. When we returned, at half-past seven next morning, we found the patient asphyxiated, a state announcing near death. The nurses were administering oxygen. The respiration was nearly null, on account of obstruction by the bronchial froth, and the gas was injected into the mouth by pressure on the elastic bulb. But little entered, still it sufficed to retard the death, which was inevitable at this moment but for this succor. But we must confess that, though the administration of oxygen in such cases may be rational, it is arrested by the difficulty of making the gas penetrate and pass the obstruction of froth. We held ourselves in readiness to perform tracheotomy, and give artificial respiration, but renounced the idea, because the same obstacle existed in a larger degree in the smaller bronchial tubes than in the throat or larynx.

As to the nitrate of amyl, it revived our patient, but it was only a passing excitement. The nervous system was exhausted, and the patient succumbed in the night, as a lamp goes out when there is no more oil. We had preserved all the forces of the patient, stopped the spasms, and arrested the asphyxia, but all that was not sufficient, and we are yet to wait to see a case of hydrophobia cured.

Nevertheless, we have thought that this action, so natural, of the treatment as we have been able to establish should be made known, and that it was worthy of your notice.

Let us add that we took care to destroy the oxygen tube, and the wooden spoon used.

We shall be very brief in the history of the second case, as we saw it but a moment, but which presented some remarkable features.

CASE II.—*A little boy, nine years old, was bitten on the right hand by a mad dog May* 26, 1875. *The dog was seized, recognized as mad, and carried to Alfort, where he died.*

The child, ignorant of the danger, returned at once to his ordinary plays and studies, and went on for one hundred and thirty-eight days without perceiving anything unusual. At the end of this period of incubation—exceptional for a child bitten in the hand—he commenced to feel a pain at the cicatrix. He was taken with a sort of itching, which made him constantly scratch himself. Two days later this torture became a pain, which extended itself to the shoulder. Four days afterwards he had difficulty in swallowing, and thinking he was attacked with quinsy they sent for a doctor, but he being absent, a medical student came. They found nothing in the throat, but ascertained that when the child would drink, he was taken with a sort of spasm. Nevertheless, he was able, by an effort, to control this contraction, and to the end of his sickness, he was able to drink and to eat some food.

But the remarkable feature in the case, was the impression of the cold air. The skin was so sensitive that each time the door was opened, the fresh air, when it had scarcely reached his bed which was at the end of the chamber, was sufficient to bring on anguish and convulsions. The simple fact of speaking to him when opposite, though three feet off, put him in the same state. The simple agitation of the air by a sound was also sufficient.

Here the hydrophobia was feeble, but there was especially ærophobia, a phenomenon already noticed by several authors. Asphyxia supervened at the end of the sixth day, with re-

jection of frothy bronchial mucus, and each time they wiped away this slaver, the contact of the handkerchief brought on the agony and contractions. Besides, he had contractions of the hands. The fingers were rigidly flexed, and he made efforts with the opposite hand to extend the fingers. This contraction did not last to the end, as it would cease for a while to reappear soon after. There was at the same time dysuria, and a permanent erection which had brought the yard on to the belly. This erection commenced on the evening of the sixth day, and ceased at the beginning of the seventh day, just before death, which took place by syncope.

We saw this child only in the last moments, and we quickly gave him an enema of thirty grains chloral, but it was returned immediately, and he died soon after.

We desired, nevertheless, to make known to you this case which offers much of interest.

First, the exceptional duration of the incubation, 138 days; second, the special form of the hyperæsthesia, which here has been ærophobia, the slaver which was bronchial as in the preceeding case, and not salivary, and finally the satyriasis which has supervened at the end, and death by syncope.

Here then, gentlemen, are the two cases which we believed it our duty to present in detail, and we beg you to excuse the length of the description on account of the interest which attaches itself to facts that the physician rarely has an opportunity of witnessing for himself.

CLINICAL RECORDS.

ART. VIII.—*Case of Transient Paralysis.* By E. B. FULLERTON, M.D., Professor of Materia Medica and Therapeutics in Starling Medical College, Columbus, Ohio.

J. J., inmate Ohio Institution for the Blind; half-witted; aged thirteen last August; menstruated first on Saturday,

November 3d, the fact being discovered while she was being given a bath. Menstruation previous to bath was profuse, afterward it was checked for eight hours. She seemed well during the interval, showing neither undue depression nor excitement. While going to bed at 8:30 P.M., as her head dropped upon the pillow, she was seized with a convulsion, the only symptom noticed by the children being stertorous breathing. The assistant matron was called, and when she reached her, she was still insensible and breathing stertorously, but was aroused within a short time afterward, appearing confused, and saying, after a time, that "she had been asleep," then returned to entire consciousness, the assistant matron leaving her one-half hour afterward; the children in the room again noticed the peculiar breathing, and, the attendant being called, found her entirely unconscious, rattling in the throat, involuntary druling of saliva, and soon passing into a general convulsion that lasted for about ten minutes.

These recurred during the next two hours, at intervals of about ten minutes, the child lying unconscious and breathing stentoriously during the interval. When I arrived, the child had been free from the convulsive seizures for a period longer than usual, and the character of the breathing had improved. I stayed in the room for an hour, during which time the patient slept heavily, but not otherwise unnaturally, the pulse being full, the temperature normal. No more convulsions supervening, I directed her to be aroused. This was done with difficulty. Her ideas were confused, and it was sometime before she recognized her usual attendant. It was now noticed that her face was drawn to the left side, remaining perfectly passive when she smiled or attempted to speak, and, on further examination, it was found that the whole right side of the body was involved in the paralysis, the leg in less degree than the face and arm, as there was, after prolonged titillation, a slight, voluntary

movement. When told to put her hand to her face, her left only went up, and when it was insisted that the right should be raised, the left again responded, the right hanging lifeless. With no further appearance of convulsion, and a slight return of menstrual flow, I left the patient. At nine A.M. the following day, after a good night's rest, the menstrual flow had returned, and the paralyzed condition entirely disappeared. While recognizing that the easiest manner of explaining the case would be to call its manifestations hysterical, yet there are several very important objections that arise to such a summary dismissal of the subject. While simulated convulsions are very common, simulated paralysis is not so common, and simulated hemiplegia is, in my judgment, nearly, if not quite, impossible. The simulated conditions of hysteria, usually imply a known form, after which they are modeled; that is, the patient has some previous knowledge of the disease, which she, more or less, unconsciously attempts to imitate. In this case the total blindness of the child would preclude such previous knowledge of convulsive or paralytic condition, as to make any hysterical imitation of them sufficiently perfect to deceive; while her mental condition would preclude her either understanding or remembering any description of such conditions given her by others. Aside from this, the character of the convulsions, as described to me, were apoplectiform rather than hysterical. The sudden stoppage of the flow of blood, the fact that the symptoms first manifested themselves as the child's head touched the pillow, the character of the convulsions, and the decided, yet transient, paralysis following it, are suggestive of apoplectiform cerebral congestion.

CORRESPONDENCE.

LEIPZIG, *November*, 1877.

DEAR DOCTOR: Perhaps a few items concerning the University of Leipsic will not be uninteresting to your readers. This university is one of the oldest in Germany, and owes its early foundation, indirectly at least, to the university at Prague, the capital of Bohemia, which was the first German university. The latter school was founded in 1348, and was frequented by large numbers from all parts of Europe. In 1409 the King of Bohemia emitted laws very much limiting the extensive privileges of the foreigners attending instructions there, when they left in a body, and, among others, founded the university at this place.

The old university buildings, which once served the purposes of a monastery, traces of which are still preserved, are situated in the heart of the city, and contain the library and lecture rooms for all the faculties, excepting the medical. The buildings for the medical department are situated in the eastern outskirts of the city, and, with the exception of the hospital, are all of them of modern date, and furnished with the newest appliances and commodities. They consist of the building for anatomy (called simply "anatomy" in Germany), the physiological institute, the chemical laboratory, the hospital, and the pathologic institute, and stand in the order mentioned.

The anatomy, the newest building, is a large and elegant structure, serving only the purposes of anatomy.

The physiological institute, under direction of Prof. Ludwig, is especially noteworthy. Though not so large as the former, it is a building of ample dimensions, devoted exclusively to experimental and chemical physiology, and is

not surpassed, if equaled, by any in the country, excepting, perhaps, the one just completed at Berlin, under DuBois and Helmholtz.

Nearly eight hundred medical students attend the courses here—the largest number at any one school in Germany—this place having taken the lead from Berlin in the last few years. The students of all faculties number over three thousand for this winter semester.

The faculty, though not presenting that array in numbers as the one in Vienna, leaves nothing to be wished for in regard to quality—as proof of which, I may mention such names as Brann and His in anatomy, Ludwig in physiology, Wagner in pathology, Kolbe in chemistry, Thiersch in surgery, Coccius in ophthalmology, and Credé in obstetrics.

A severe loss was occasioned by the death of the eminent pathologist and clinician, Wunderlich, in September last. He was born in the Black Forest, in 1815, and was the son of a physician. He first attended the Polytechnic at Stuttgart, and then studied medicine at Tubingen, from where he graduated in 1838, and then went to Austrian, Belgian, and French schools. After his return, he was made assistant at the "Catharinen Hospital," and, one year later, published his first work—"On Nosology of Typhus." In 1843, after having been assistant, and then director of Heerman's clinic, he was made professor extraordinary. Three years later he became professor ordinary. In 1841 he began, with Roser, the publication of the "Archiv für Phisiol-Heilkunde," soon followed by his "Hand-Book of Pathology." When Oppolzer left Leipzig, in 1850, he was called to fill the vacancy, and here began his studies on fever process and bodily heat, to the publication of which is owing the universal introduction of the fever thermometer.

Wunderlich was an early and firm adherent to the new school which was being established at Vienna by Skoda and Rokitansky, and had for its object the breaking with the old

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doctrines, and the foundation of therapeutics on a basis made by physiology and pathological anatomy.

At the clinic, Wunderlich's place is now taken by Prof. Wagner, and rumor has it that either Cohnheim or Rindfleisch are to be called here for the chair of pathology.

A. M. BLEILE.

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211 W. THIRTY-EIGHTH STREET,
NEW YORK, *November* 26, 1877.

Prof. J. H. Pooley, M.D., Editor Ohio Medical and Surgical Journal:

DEAR DOCTOR: The medical world of this great metropolis is again displaying its usual activity after several months of rest and recreation. Many of our truth-seeking laborers in the field of advancing medical science—and we have many such among us—have returned to their posts of duty from far and near—some refreshed and seemingly rejuvenated; others with the imprint which the tooth of time has depicted upon their faces as a sign of advancing years. They are again dispensing the fruits of their experience and accumulated knowledge to those suffering from the ills and ailments to which human flesh is heir.

Professor Sayre, of Bellevue Hospital, has been the recipient of many honors in England, where he has exhibited the Plaster of Paris bandage during the last summer.

Professor Bozeman, of this city, has also returned lately from abroad, crowned and adorned with *well-merited laurels!* His beautiful operations for the cure of vesico-vaginal fistulæ, as demonstrated and successfully practiced by him in Paris, Heidelberg, and in Vienna, Austria, in the late Professor Simon's, and in Prof. Carl von Braun's Clinic, in the presence of the most eminent surgeons of the Vienna Medical School, have shed lustre on that excellent American gynæcologist's illustrious name.

Many other notables in our New York profession have returned (among whom I will mention only Professor Brown-

Séquard) to resume their practice here; but space does not permit to mention all, and I must be pardoned for leaving off here my report of the arrivals and the return to this city of other eminent medical men, as I intend to communicate other medical news that might interest our professional brethren who live at a distance from us, and are interested in our doings.

The opening exercises of the Bellevue Hospital, and of the University Medical Colleges, the College of Physicians and Surgeons, and the Women's Medical College took place in the early part of October last. The disciples of Æsculapius are multiplying in large numbers! Thousands upon thousands of young men and women—of doubtful ages—seem to choose the study of medicine in the expectation of a bright and splendid future. How many of these will meet with success, and how many will be sadly disappointed, would be impossible to foretell. The honest, truthful, energetic, skillful, patient, accomplished, painstaking, conscientious, modest, self-reliant, courageous, thoroughly educated student, with the necessary pecuniary means to get a fair start, will, in all human probability, be successful. The lazy, negligent, careless, shiftless, dishonest, on the contrary, will find no encouragement, and will hardly ever succeed. Whoever commences the study of medicine as a money-making business will, in the majority of cases, always be disappointed. I understand from many of my professional friends here who do not exaggerate, that one-half of the New York physicians, even those who have been here practicing faithfully, and attending to their professional duties continually and conscientiously, do not collect money enough to defray their daily necessary expenditures. The physicians of New York are complaining of the hard times, as well as people of other pursuits. The depreciation in real estate has forced even the rich to curtail their expenditures, and to become more economical than formerly. This enforced economy is felt by

the whole community, more or less. Where people used to occupy, a few years ago, a whole house, two families of the same number of individuals now occupy the same, in many instances. Instead of buying two suits of clothes a season, one suit has to last two seasons, and so on. The wealthy, the middle, and the poor, or laboring classes as they are usually called, all suffer alike and in proportion by the hard times. The physician's bills can not be collected readily; the charges have to be more moderate; and although there are plenty of sick at all times from avoidable and partly, as far as we know, unavoidable causes, still there are too many physicians in this city to be prosperous.

Another cause why practice is bad, is to be found in the numerous dispensaries. Even well-to-do people go to the out-door departments and public dispensaries, where not only skilled medical aid is furnished *gratis*, but also medicines. Our medical colleges all have their clinical instruction, and absorb a great deal of material that would be compelled to seek relief at the hands of private physicians. At first, dispensaries were established for the poor and destitute only, but now-a-days the well-to-do even go there to be treated free of charge. One dispensary, the New York Hospital (out-door department), charges one dollar per month for the medical attendance of one person on the so-called "provident plan"—a sort of insurance against sickness on the plan of life insurance. This is an excellent plan, as far as the insured are concerned, but it is offering medical advice to those who are able to pay for almost nothing, if we compare what would be a just charge made to the members so insured if they had to employ a private physician.

Another reason why some physicians succeed less than others is because of certain cliques and rings which exist, to the disgrace of our noble profession, in this city.

To those of your readers who visit New York from a distance, I would say visit the New York Hospital and its library

I have endeavored, in a former letter, to give a brief sketch of the beauties of that splendid institution. I have visited its medical library lately, which is open and free to all. It contains 11,000 volumes of choice medical literature, and has a large number of medical periodicals. I have taken down a list of the journals to be found on the tables of the New York Hospital library, but I have thought it would be too voluminous to publish the names of all, and I will simply state that there are 19 English, 14 American, 22 French, and 27 German medical periodicals placed at the pleasure and for perusal of any one, free of charge, who will go there and benefit by reading the vast amount of knowledge contained in their pages.

Several of our medical societies have recently had their anniversary reunions, among others the New York Academy of Medicine. Prof. T. G. Thomas was the orator of the evening, and I need not add, delivered one of the most eloquent orations that it has been my good fortune to listen to. He felt, he said, somewhat reluctant in accepting the invitation to deliver the anniversary discourse, because, with his usual modesty, he thought there were other members who could fill that post of honor better than himself, but there was none who felt more proud at the distinction thus shown to him than himself. He reviewed the whole history of medical science from the Egyptians under the Pharoahs, the Jewish, the Arabian and Oriental schools of antiquity, the Roman and the Greek periods, and the status of medical science during the time that those nations produced the many eminent men whose names are even to-day familiar to every educated man. He referred to the middle ages, and the great progress made in hygiene by the invention of gunpowder. Before the invention of that deadly compound, human habitations were built close to each other, where the rays of the sun and pure air could only with difficulty enter. In those days the strong oppressed the weak, and wars were conducted

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by hand to hand fights. The invention of gunpowder made the former close, dark, and ill-ventilated human abodes useless as habitations of defense against their enemies, and the streets and houses were built more rationally and thus contributed toward diminishing the pestilential outbreaks, to a great degree, which were formerly so frequent and destructive. The printing press was referred to as another aid towards diffusing medical knowledge; then came the inventions of the microscope, where one person could see with several 100 eyes at the same time. The discovery of the circulation of the blood by Harvey, has revolutionized the whole study and understanding of the origin and progress of disease. Where formally a black mass could be seen, now we see by the aid of the microscope acini, we find fibres, cells, granules and threads of living matter woven together so as to form an organ. We can distinguish a benign from a malignant tumor by the aid of our magnifying powers. What formerly was only conjecture is to-day demonstrable to every one who has eyes to see and ears to hear. Percussion and auscultation, the ophthalmoscope, the laryngoscope, the otoscope, the endoscope, etc., were all cited as instances of our great improvements and advance in the science of medicine. He defined the difference between medicine as an art and medicine as a science. The word science, derived from the latin word *scio* I know, means to know without the practical application of that knowledge. But medicine as an art is *to do*, or the practical application of science, therefore we say the art of surgery and the science of medicine—science and art must go hand in hand with each other. All theory is good only, and of practical utility if applied artistically to some purpose. The scientific and practical application of our better knowledge of to-day, he justly considered as a triumph, and a result of thorough study. He instanced a disease known by the name of Phlegmasia alba dolens, the nature of which was formerly misunderstood and wrong treatment

was the result—to-day we know the condition of the blood-vessel affected to be such that blood letting and antiphlogistics of an already debilitated patient, as formerly practiced, would be injurious instead of being beneficial; to-day the plugging up is removed by posture, by generally invigorating treatment, by measures of support, etc. But he asked, what do we know more to-day about whooping cough, its causes, its treatment, etc., than was known a thousand years ago. He very well knew that there were twenty gentlemen in the room present ready to spring to their feet, and to assert each of having a specific that will cure that disease.

What is plainer than that where there were so many specifics for one disease, quinine, chloral, belladonna, etc., there was none at all. In general, except mercury and the iodides, in syphilis, chlorate of potash in aphthous inflammations of the mucous membranes, of quinine in fever (intermittent), we had hardly any specific. Our duty, therefore, was to study the nature and causes of diseases, not by speculation and empty argument, but by demonstrations, ocular and otherwise. He paid a high tribute to American medical science. Mott, Francis, McDowell, Sims—they all contributed largely towards the advance of medical progress—but still he was free to acknowledge that to Germany belongs the credit to-day of having produced the most earnest and thorough workers in the field of medical advance. "Where have we a man?" he asked, "like Virchow, Recklinghausen, Klob, Brücke, Dubois, Raymond, Rokitansky, Laugenbeck, Liebig, and Waldeyer, Stricker, Wedl, Oppolzer, Niemeyer, Wunderlich, Traube, Billroth, Pitha, and hundreds of others whom German medical literature can boast of. Let our young men make up for our deficiencies, and let us extend our terms of study." In Professor Thomas's excellent address we heard a great deal about others, but nothing about himself. Let me add, if all medical practitioners had contributed so much by their writings and teachings in this country

or only one-tenth of it, as Dr. Thomas has, we would not need to look across the ocean for our most illustrious men, but we would find plenty of them at home.

In this connection, I regret to have to refer again to the exceedingly disagreeable controversy between Dr. J. Marion Sims, who has gone to Europe, to remain there until after the Paris Exposition, for the purpose of re-writing, as we are informed, his book on Uterine Surgery, on the one hand, and Drs. Peaslee, Emmett, and Thomas, on the other.

In a former letter I have, as an impartial reviewer, given you the verdict of those of my professional friends in this city, whom I have heard give an expression of their views in this controversy. Since then, I received an "*Extra*" of the *St. Louis Clinical Record*, dated St. Louis, September, 1877, William B. Hazard, M.D., editor, entitled "Editorial Interview with Dr. J. Marion Sims, in relation to the Woman's Hospital controversy." It commences with a quotation from Shakspeare: "Such men are never at heart's ease while they behold a greater than themselves." According to the *Record* mentioned, Dr. Sims has been maltreated, abused, and made the victim of personal and professional jealousy and ingratitude. This is published, we are told, by permission of Dr. Sims.

Dr. Sims acknowledges that Dr. Thomas was known as an admirable teacher, and a most accomplished physician, and he always entertained for his industry and talents the highest admiration. Sims attacks the three gentlemen collectively, and accuses them of having falsified the returns. He says: "Such 'bulldozing' of statistics was never heard of before in the annals of medicine." He (Sims) accuses Dr. Thomas of having pulled the wires against him at the time. He further says: "Doctors Peaslee, Emmett, and Thomas have no regard whatever for dates. They seem to jump at what they wish, whether consistent with facts or not." After this Sims says: "Many hospitals can boast of one or two great

names, but no other hospital in the world can boast of three such men as Peaslee, Emmett, and Thomas. Peaslee is the author of the best monograph in any language on any subject. I would rather be the author of his book on Ovarian Tumors than any other book that our medical literature has produced. Emmett has operated more frequently for vesico-vaginal fistula than any man living. He operates with great dexterity and success. He performs my operation now, just as I taught him twenty years ago. I feel proud of my pupil. His operation for lacerated cervix uteri will give him immortal fame, even if he should never contribute another thing to the progress of gynecology. Thomas is one of the most eloquent teachers that New York has ever produced. He, like Peaslee, is learned, classical, scholarly. He is the author of one of the best books ever written on the Diseases of Women, and as a practitioner he has no superior."

"After considering all the evidence," Dr. Hazard says, "we have no hesitation whatever in saying that we believe Dr. Sims has proved his case against Drs. Peaslee, Emmet, and Thomas. The charges made by Mr. Stuart have been investigated, and instead of his statements being unqualifiedly false, they are proven to be simply true." And he concludes by saying: "In the struggle for existence, which is yearly becoming a fiercer one in the American medical profession, Dr. J. Marion Sims has shown his ability to survive, although every deadly moral weapon has been used against him. Jealousy, calumny, vituperation, slander, malice, falsehood, treason have been combined against him, and he still lives to fight his enemies with the bright blade of truth, and confusion overwhelms the conspirators."

I have, in a former letter, given you my views regarding the difference between the highly honorable contesting parties, and I have, with many other physicians, arrived at a different conclusion from that arrived at by Dr. Hazard, of St. Louis. I still maintain, even after having carefully

re-read Dr. Sims's latest version of the affair, as given in his interview with Dr. H., and I must confess that I am yet convinced that Dr. Sims, although the founder of the New York Womans' Hospital, does Drs. Peaslee, Emmet, and Thomas great wrong by assuming that they conspired against him in order to force him to tender his resignation as one of the surgeons of the Womans' Hospital in the State of New York, or that they were capable of falsifying the records of that institution. Their reputations are established even by the testimony of Dr. Sims himself, as great operators, teachers, and authors. They have all the practice they can possibly attend to, and therefore had very little to fear from a rival even of Dr. Sims's skill and reputation. But let your readers form their own judgment. "*Audiatur et altera pars.*" For that reason alone I made the extracts from the "*Extra*" for what it is worth.

The members of the "Liberal Club of New York" have had quite a controversy with the New Jersey medical students, and why? As the name of the Club indicates, it consists of several hundred members, ladies and gentlemen of all nationalities, all creeds, without distinction of race, color, or station in life. It numbers among its members merchants, lawyers, musicians, painters, clergymen, soldiers, etc. Its object being to hold weekly meetings for the purpose of listening to, and discussing, any subject which any member, or even others who are not members, may bring before the society, after having received permission, or having received an invitation to read a paper or to deliver a discourse. This society of Liberals will hear a lecture one evening *for religion*, the next *against religion*, etc. The idea being of having a society where opportunity is offered for the ventilation of any topic which any one desires publicly to discuss. It is not to be wondered at, therefore, that communism, imperialism, republic and monachy, free-love, resumption of specie payment, and repudiation should, in

succession, find their advocates among the million inhabitants of this city. The Club has, unfortunately, hired the hall of the College of Physicians and Surgeons, where the lectures of the medical students are being held, in daytime, every Friday. A few weeks ago a well-known quack doctor, who had the impudence, without any qualification whatever to say anything worth listening to, to speak before the Liberal Club, and said "that the medical students were being given a license to murder wholesale!" Some medical students, attracted to the lecture-room by idle curiosity, heard this remark, which was made and repeated by an "ex-clergyman," and naturally enough hissed at such an outrageous utterance, and tried to break up the meeting. Thereupon the police were notified, and two medical students were arrested and placed in jail. Brought before the magistrate next morning, they were at once liberated, and the officer who made the arrest was severely reprimanded. The colleagues of the students were very indignant at the arrest of their friends, and held meetings to sue for damages for false imprisonment, and concluded to break up the meeting of the Liberals at their next session. These latter, however, hearing of the determination of the students, asked for, and obtained, assistance from the police, and have held two meetings since under the protection of the police force, stationed in and around the College. By coughing, sneezing and stamping, and placing strong cayenne pepper upon the floor, the students attempted to dislodge the Liberals, but have thus far not been successful.

General Sigel read a paper before the Liberals entitled, "Are the bones found under the altar of a church really those of Christopher Columbus, or are they those of some other man?" The general stated, as he was no medical man he could not say whether bones of a large man—Columbus was a very tall man—could be boxed up in a little box sixteen inches long, and eight inches high, and eight inches

wide. Second query: Can a medical man tell whether bones deposited nearly four hundred years ago could be still found as bones, without having decomposed or fallen asunder? Third query: Could not these bones belong to some other man, woman or child, and not be those of Christopher Columbus?" "Some one," he said, "I fear I may offend some one in the room, pretended in Germany to have found the bones of the Holy Virgin, Maria, but the German physicians, who were learned, more so than those of Santo Domingo, where the pretended bones of Christopher Columbus were found, decided that those bones were the bones of a chicken." Such was the great lecture of the great General Sigel on the bones of Columbus.

Now, the reason why I devote so much space to bones made about it, by Sigel, is this: I would like to know in how long a time bones do decompose and fall asunder, generally, in our cemeteries? Let some one inform me on this subject. Of course, in the dry state, bones will remain in their natural state indefinitely. Bones have been found of extinct animals, in cold regions, where they must have laid thousands of years. The same is the case with Egyptian mummies. The bones of Christopher Columbus, lying in a church at Santo Domingo, could remain intact for centuries. The arm of St. Stephen, King of Hungary, who died in the eleventh century, is yet to be seen in St. Stephen's Church, in Vienna, Austria, intact, and unaltered. But how long it takes for a skeleton to fall apart, in a grave damp and favorable to decomposition, is, I think, dependent upon the moisture of the ground. In some places five to six years may suffice; in other drier localities it may take twenty to thirty years. In a medico-legal point of view, this query may be of some interest.

Truly yours,

DR. RUDOLF TAUSZKY.